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Cardiac Neurosis

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CARDIAC neurosis goes under a number of different terms, such as *effort syndrome, neurocirculatory asthenia, irritable heart, soldier's heart,* and other names more or less descriptive of the symptoms or conditions under which the symptoms arise. Dr. Robert H. Halsey, New York City, defines it as "a visceral or organ neurosis defined as a disorder of the physiologic action of the heart produced by an emotional reaction of the patient." Dr. H. E. Richardson of St. Paul, Minn., describes cardiac neurosis as "the persistent fear of premature death or invalidism through the medium of heart disease."

This is an intensive subject and one which requires much thought and study. Believing that the best way to handle such subject is to use as few words as possible, I am going to give a few of the symptoms and signs of cardiac neurosis and discuss briefly the treatment, describing a few cases which I have encountered in the past eight months, which to my mind illustrate a few of the common types run across in every-day practice by the general practitioner.

SYMPTOMS AND SIGNS

The most common symptoms are: 1. Dyspnea. 2 Palpitation. 3. Tachycardia. 4. Weakness. 5. Precordial pain. 6. Hyperasthesia. 7. Cough. 8. Faintness and dizziness. 9. Fear of death from heart trouble.

These, as you can readily see, are symptoms of organic heart disease, but in the patient with cardiac neurosis they are usually found in a more exaggerated form, and he usually has more symptoms, or at least complains more bitterly of them than one with organic heart disease would, with the exception of one having attacks of severe angina pectoris. These patients usually appear flushed and perspire freely. Usually their feet and hands are clammy. The heart rate accelerates greatly on exertion or with excitement, but soon quiets to a normal rate. Sometimes there is cyanosis, but it is usually blotchy in distribution. Some of these patients have a persistent cough. Precordial distress with precordial hyperasthesia are often encountered. These patients will often start at the slightest noise. They appear apprehensive and worried.

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The majority of patients with cardiac neurosis is found among young adults, particularly young women, and occasionally it is encountered in young children, more rarely in people past fifty.

These cases usually present a neurotic background and the etiology of the condition seems to be, in a large part, a question of strain and stress in relation to the ability to meet this strain and stress. Sometimes the condition follows an infectious disease and it may develop very gradually, or at times more abruptly. The patient may carry on for a time without any cardiac symptoms and then the symptoms will be manifest following some fairly obvious strain or disappointment met by the patient. Some patients are inclined to imitate, and these cases are particularly interesting. Others simply fear heart disease. Endocrine upsets, sympathetic or vagus unbalance, poor metabolism, (and this type has been especially mentioned by Soma Weiss in the *Annals of Internal Medicine,* July, 1937) should be looked for in the etiology. In other words, it seems best to regard these patients as subnormal in some respect concerning their nervous system, preferably on a congenital or developmental basis. This idea gives a good key to an understanding of the limitations of treatment. Careful questioning will usually give a clue, which, with the entire absence of any organic heart or arterial disease, will justify a diagnosis of cardiac neurosis.

Usually these patients are definitely below normal in physique and nervous stamina. They do tire easily; they are not able to meet the normal stress of present-day living. Their symptoms, however, which convince them that they have heart disease are not caused by cardiac or arterial disease, but from general conditions of the body or nervous system. When physical examination is done usually there will be positive evidence of the symptoms found, but no evidence elicited that there is any heart trouble. There will be a rapid pulse, at which time there will be a snapping quality to the first sound at the apex, the pulmonic second sound may be accentuated, there may be a thrill or murmur, which often is pre-systolic and connected with a systolic murmur, which is not uncommon and suggests a slight degree of mitral stenosis. This was the diagnosis from which originated the terminology, "soldier's heart," during the World War.

The blood pressure may be elevated, particularly on the first examination, but the arteries show no sclerosis. As a rule, there is no arrhythmia, but in quite a number of cases extrasystoles are encountered. There is no cardiac enlargement, no signs of passive congestion, and no edema. The neurosis can be found in all stages, from a very early fear or phobia of heart disease, which may not develop to any extent, to the far advanced neurosis in which complete cure is almost impossible.

DIAGNOSIS

Diagnosis depends on the failure to find any evidence of disease of the heart or vessels to explain the circulatory symptoms in a patient who gives evidence of defective physical or nervous development. This definition was taken from Christian's, "Diagnosis and Treatment of Diseases of the Heart."

There are three things to be considered in the diagnosis:

1. Is there structural damage and what is its etiology?

2. Is there a psychoneurosis arising from a fear of heart disease or fear of the results of heart disease?

3. Is there a visceral or organ neurosis which may be defined as a disorder of the physiologic action of the heart produced by an emotional reaction of the patient?

Sometimes it requires more than the efforts of the general practitioner or the cardiologist to establish the basic reason for a cardiac neurosis. A skilled psychiatrist may often be useful. The physician must, of course, exclude the possibility of organic disease, and this is not always easy. In fact, in a number of cases organic disease is present, but not causing the symptoms shown by the patient, such as compensated mitral stenosis. It is often hard to distinguish cardiac neurosis simulating angina pectoris from the true condition. Consideration must be taken of the exact type of pain, whether it increases on exertion, the way the patient describes it, and the general appearance of the patient. The history of the patient's observation of someone who had real angina pectoris will usually justify a definite decision. It is not safe, of course, to diagnose one of these cases until several visits or observations have been made, with the hope of witnessing an attack. In many cases it is better to call it a neurosis rather than true organic pathology when uncertainty remains. Some of these patients may simulate or suggest mitral stenosis as a diagnosis. History of the absence of acute rheumatism or chorea usually should clear this up. Hyperthyroidism can be eliminated by observation of physical signs or by a basal metabolism test. Tuberculosis, with its attendant weakness, dyspnea, rapid pulse, etc., may lead to suspicion of heart trouble, but this can be eliminated without much difficulty. However, it is well to have an X-ray of the lungs before making a final decision, especially in those cases with history of cough. Exercise does not usually cause an increase in the symptoms in cardio-neurotics. The most valuable aid in diagnosis of the cardio-neurotic is a complete and comprehensive history.

In practically every case, somewhere in the history will be found a suggestion which has led the patient to become "cardiac-conscious," if such a term may be used, and in many cases precordial pain or distress is often the sensation which directs the patient's attention to the heart. Precordial pain is synonymous with angina pectoris in the mind of the average person and perhaps this is fortunate in a way if it will lead him to a physician who will make a careful and painstaking examination. The dread of heart disease may develop in an individual because of the tragic death of a relative or friend. I have found this to be the case in most of the patients against whom I have placed this diagnosis.

Paroxysmal tachycardia, and, in some cases, extrasystoles can be produced by the excessive use of tobacco and coffee.

X-ray may help in determining the exact size and position of the heart, but is rarely needed. Electrocardiogram rarely gives any help in diagnosis, but is extremely useful as a psychological treatment of the patient.

TREATMENT

If one experiences trouble in diagnosing these cases, that is nothing to what he will experience when he starts trying to convince the patient that he has no heart trouble. In the first place, it is absolutely necessary to establish the patient's confidence and to convince him that he is getting an extremely thorough examination. Any suggestion of abnormality, no matter how trivial, should be investigated by all methods and means at the physician's disposal. Hurry and lack of thoroughness will destroy the patient's confidence in the physician, and if the patient is to be told that he has no heart trouble he must first have the feeling that the physician has studied him so thoroughly that he knows exactly what the condition is. When the physician is convinced that the patient's heart is sound and that the symptoms are due to cardiac neurosis, it will not do any good simply to tell him that he has nothing wrong with him unless he can explain at the same time why the patient has developed and is experiencing the symptoms which he has. It has always been my contention that the average adult will react much more quickly in showing his confidence in the physician if the physician will go to the trouble to explain the why and wherefore of every method of diagnosis. This may take a little more time, but with the articles published in the lay magazines, available to all patients, and with the amount of knowledge the patient has obtained from these articles and other sources, each one knows enough about these things so that additional knowledge is aboslutely necessary if they are to believe what the physician tells them. It is no longer possible for the physician to

nold the patient's confidence if he is going to be secretive about his findings and simply tell the patient that there is nothing wrong.

After complete understanding between the patient and the physician is reached, the treatment in most of these cases is simply that of gradually bringing the patient back to a normal mode of living. In the more advanced cases, who have actually become mentally ill and lost confidence in themselves, this is likely to be a long drawn out affair of gradually increasing the exercise and instituting a general hygienic regime, increasing it with the patient's ability to hande it. There are some cases in which a complete cure is impossible. However, great improvement is possible in most cases. Any abnormality, such as focii of infection; namely, teeth, bad tonsils, sinus, etc., should be treated or eliminated, but only when it is definitely decided that there is disease. Tonic baths, cold sponges, adequated diet, and fresh air and exercise are to be used. It is usually not a good idea for the patient to be placed in a hospital or sanitarium, and drugs are not needed except in the extremely nervous cases, where some bromides are indicated. It is always a mistake to indicate in any way that heart disease is present. As I said before, it is much better to lean toward the side of neurosis rather than the side of actual organic heart disease. In cases where actual organic disease is compensated, "treatment must be carefully maneuvered, for complete reassurance cannot be given nor can all of the restrictions on activities be removed. The limitations should be minimal, but carefully worked out, judiciously applied and frequently checked." I quote from Herrmann's, *"Synopsis of Diseases of the Heart and Arteries"*: "The patient's response to his relative freedom and reassured states must be observed unostentatiously and nonchalantly at rather frequent intervals."

CASE REPORTS

CASE NO. 1: Mr. G. K. Age, 53. Occupation, cabinet maker. First saw him on February 22, 1938. C. C., heart trouble and weakness.

HISTORY: Palpitation, pain in the epigastrium, right chest, and point of the left shoulder. Tenderness and hyperasthesia in the lower part of the left chest. This pain had been present for several years and at times was more marked than at other times. Pain was not relieved by soda, but takes soda before meals and seems to get some relief that way. Has attacks of indigestion. Has been told by doctors that he had heart trouble and he has been very careful since that time. Has been to eight different doctors in the city, but has not had the pain relieved, and his heart trouble has not gotten any better.

FAMILY HISTORY: Non-essential except that his father died with heart trouble.

PHYSICAL EXAMINATION: He is a thin individual with a "sick look." Heart sounds were normal throughout. Pulse, 76. Blood pressure, 110/82. On other examinations it varied from 110/82 to 102/80. Abdomen showed a moderate amount of rigidity in the epigastrium, but no marked tenderness. Heart was normal in size and position in the fluoroscope. Electrocardiogram was normal.

I saw this patient on an average of twice a week for at least six weeks and tried to assure him that he had no heart trouble. He went out from under my care in May and I had not seen him since that time until a few nights ago, at which time he had another severe heart attack. I examined him and found his blood pressure 136/72 and his pulse around 80. The heart sounds were normal and clear-cut. He was having severe pain, which started in the upper right chest and moved down into the abdomen, and severe pain in the left shoulder. There was marked abdominal rigidity, which persisted in spite of large doses of morphine. He was operated after a diagnosis of perforated ulcer, and an abdomen with free blood in it was explored without any point of bleeding being found. Final diagnosis: Ruptured gastric ulcer of the posterior wall. Diagnosis was made on the length of time patient had had pain, character of pain, no pathology found, and history of father's death.

CASE NO. 2: Mrs. B. S. Age, 28. Occupation, nurse. First seen Jan. 6, 1938. C. C., heart trouble.

HISTORY: Showed that she had a moderate amount of constriction in the chest, a rapid pulse, and a sensation of smothering. This started about three weeks prior to the time that I saw her. These symptoms became so bad that she had to go to bed, but she was not relieved by complete rest of a week or ten days.

PHYSICAL EXAMINATION: Shows he to be a well-formed young woman. Chest is symetrical. Heart sounds normal in character; heart appeared normal in size and position in the fluoroscope. Pulse was 134. Blood pressure, 120/80.

At the second examination her pulse was 140, and after a few minutes was down to 96. At the third examination the blood pressure was 126/82, pulse 144, and after a few minutes it dropped to 94. Electrocardiogram was entirely normal.

Blood count showed hemoglobin 66%, red count 3,400,000, white and differential count essentially normal. This young lady was put on a tonic and advised that if the hemoglobin did not come up in a short while she should be given a small transfusion. However, in a matter of a few weeks, after assuring her that she did not have heart trouble, her pulse was normal and she has had no recurrence of the attacks since. She had been told that if she did not quit working so hard she would develop heart trouble.

Diagnosis was made on no pathology being found, history of being told that she would develop heart trouble, no relief by rest in bed. Anaemia.

CASE NO. 3: Mrs. E. H. Age, 55. Occupation, teacher. C. C., heart trouble, with heavy feeling in the chest.

FAMILY HISTORY: Mother died with heart trouble one week ago.

PERSONAL HISTORY: Suffers with shortness of breath and inability to climb steps without becoming completely out of breath. This condition had been present for about six weeks. Her work makes it imperative that she go up and down steps several times a day, and she has decided that she had better quit work because she is afraid she will have a heart attack and die if she has to continue climbing the steps.

PHYSICAL EXAMINATION: Blood pressure. 128/82. Pulse, 86. Heart sounds were normal throughout. Heart was normal in size and position in the fluoroscope. Electrocardiogram was normal. This check-up was repeated again in two weeks, after a tonic was given her, and after she was assured that she had no heart trouble. This was repeated again in another two weeks, with a reassurance of no heart trouble. She is now in good condition and has suffered no recurrence of the

shortness of breath more than is natural in climbing steps at her age.

CASE NO. 4: N. D. Age. 41. Occupation. physician. C. C., weakness, edema, fever, cough, loss of weight.

PAST HISTORY: Was in an automobile wreck, at which time there was a fracture of the skull, involving the frontal bone and the zygomatic process, and a fracture of the left ribs and left shoulder. Following this a lung abscess developed at the left base, from which a large amount of sputum was expectorated, but which apparently healed very nicely. Some few months later a tuberculous infection was discovered at the right apex. He was brought to El Paso and put in a sanatorium, on strict rest, and after a period of three or four months the tuberculous infection cleared up nicely and he gained weight and was running no temperature. At about that time his pulse began to be quite rapid.

PRESENT HISTORY: Went to William Beaumont Hospital for examination and while waiting for the doctor he had a heart attack. He became very weak and dizzy, and described pain in his left chest and numbness in both arms. He was put to bed immediately and has been in bed practically ever since.

No stone was left unturned to arrive at a diagnosis in this young man's case. All laboratory tests were done. Blood counts have been essentially normal. Sputum has been negative for tubercle bacilli or any other form of infection. Wassermanns have been repeatedly negative. All agglutination tests negative. Electrocardiograms have been done repeatedly, all of them negative. Basal metabolism essentially normal, but at one time was low. Has been given thyroid for this with no improvement in his symptoms. At one time a weak positive for Malta fever was found and he was put on Sulfanilamide for this, with no good effect. At about this time he was running some fever, but it cleared up in about a week or ten days. During all of this time he had complained of pain at intervals in his chest and points of tenderness over the precordium. During these times his pulse might or might not get rapid; the blood pressure might or might not come up, but frequently following these attacks petechia would appear on the feet and ankles or probably on the hands and arms. He said at times he could feel these petechia appearing in his intestines. The heart sounds have always been clear-cut and the heart has never been found enlarged on physical examination or by X-ray appearance.

The last treatment that was given him was not given in an effort to treat him. but a spinal puncture was done for diagnosis. Pressure was normal and all laboratory work done on it was normal, so that nothing new was derived to help us with our diagnosis. Immediately following that the patient started getting better and he has continued to improve ever since. He is now going out for rides two or three times a week, something he would not even attempt for a year and a half. He is not running any fever, his pulse rate stays down regularly, he has had no recurrence of pain, and has not had any recurrence of other symptoms such as edema or any petechia.

I bring this case up to show the difficulty in diagnosing some of these cases and to show that one cannot be sure he has diagnosed properly in any of these cases. Something more than a cardiac neurosis certainly has been wrong with this patient and I am not at all sure that cardiac neurosis is the proper diagnosis at present. However, we will continue this treatment, hoping that the improvement will continue.

First National Bank.

Tumors of the Oral Cavity

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IN THIS discussion the oral cavity is meant to include the mouth with its vestibule and fauces, limited in front by the lips and behind by the pharyngopalatine arches (posterior pillars). Inasmuch as the greater part of this cavity is lined by mucous membrane it is natural that most tumors as well as pathological conditions in general arise in or disturb this lining. The malignant tumors arising in the lining membrane comprise the large class of tongue, buccal, and tonsil carcinomas. Benign lesions affecting the membrane are divers and may be part of the picture of systemic disease or entirely local affections. Among the former such diseases as tuberculosis, syphilis, leukemia, scurvy, pernicious anemia, measles, scarlet fever, pellagra, pemphigus, lichen planus, agranulocytic angina diphtheria, typhoid and pneumonia are included. Pregnancy may produce hypertrophy of the gums and sensivity to drugs such as barbital, acetanilid and antipyrin compounds may cause oral eruptions. (1) Numerous, also, are the more or less distinctly local conditions such as canker sores, leukoplakia, papillomas, mucositis from irritation or trauma, pyogenic inflammations and granulomas, thrush, chronic apthae (periadenitis mucosa necrotica recurrens). Fordyces' disease, actinomycosis, pyorrhea, Vincent's infection, noma. Scrotal, black, and geographic tongue and glossodynia may be the reason for seeking professional advice. The etiology of the latter is obscure, but we must admit that the subjective pain usually along the sides of the tongue is a real affliction in a certain percent of women. It has been noted that some of these cases show enlargement of the glands on the sides of the tongue which lie just in front of the anterior pillars. These glands in the lower animals, such as the rabbit, are quite large and have been called foliate (leaf like) papillae. Whether real or fancied, I have seen the pain entirely disappear after the application of 25 mghrs. of radium to these glands or by electrocoagulation.

Intra-oral tumors may arise from or in structures other than the mucous membrane and present into the oral cavity. These tumors may be cystic or solid. The cystic forms are usually of epidermal origin and include ranulas, mucus cysts, dental root cysts, follicle or dentigerous cysts, simple bone cysts, dermoids and thyroglossal cysts. The solid

ones are frequently of mesodermal origin and include gum boils, epulides, fibromas, lipomas, osteomas, exostoses (torus palatinus), mixed tumors of salivary type, and sarcomas. Hem- and lymphangiomas, admantinomas, and giant cell tumors (osteitis fibrosa), depending on their cellularity, may be cystic and solid. We also see invasion of the oral cavity by advanced carcinoma of the lip, antrum, or nares, by necrotizing affections of the neck, by basal fibroids.

We, then, by inspection and palpation, attempt to decide whether the tumor is primarily of the mucus membrane or whether the membrane is being secondarily invaded or involved. After the local examination has revealed the characteristics of the lesion a general examination must be done to ascertain not only the general state of health (treatment might be influenced by the presence of age, debility, hypertension, myocarditis, etc.), but also to find out if the local lesion may be a manifestation of systemic disease. Metastases must be searched, for although, as a rule, metastases are local to the neighboring lymph glands and not widespread. The presence and extent of secondary infection should be noted. The chief laboratory aids will be biopsy diagnosis, bacteriological examination, Wasserman, blood counts, and X-rays. Sex, age, occupation, habits and history help us form probabilities and conclusions.

If our patient presents an ulceration, its extent in width and depth is noted. Especially do we wish to know the amount of infiltration and bimanual examination usually gives us a good idea. Do not hesitate to perform biopsy if the age of the patient, duration of lesion, and its characteristics are compatible with carcinoma. In considering intra-oral carcinoma we should distinguish those arising on the tongue from those occurring on the buccal surfaces, alveoli, palate and tonsils, as we find that prognosis varies for different sites. It is generally true that the degree of malignancy increases from the lips in front to the pharynx behind.[2] Welch and Nathanson[3] found the median life expectancy in carcinoma of the lip to be 66 months, buccal mucosa, 24 months; upper alveolus, palate and lower alveolus, 18 to 20 months; tongue, floor of mouth and tonsil, 15 to 17 months, and pharynx, 14 months. Carcinoma, too, is much more frequent in the lower rather than the upper one-half of the mouth.

If we are dealing with a swelling instead of an ulceration we determine its nature as to fluid content, softness or hardness, pulsation, movability and nature of the epithelium covering it. If thought to be cystic, aspiration is tried. Aspiration may also be used in an attempt to obtain diagnostic tissue or cells from a solid tumor. As a rule, the benign conditions such as gum boils, ranulas, cysts, epulides, etc., constitute the "swellings," while carcinoma is usually an ulcerative and infiltrative lesion. The exfoliative cauliflower type of carcinoma is rarely encountered in the oral cavity.

PRE-CANCEROUS LESIONS

As in carcinoma of the skin, so in carcinoma of the mouth we find frequently a pre-cancerous condition or forerunner of cancer. Leukoplakia of the mucus membrane is comparable with keratosis of the skin and both may be the starting point of malignant change. Different forms of irritation are considered to be the cause of both, but individuals exposed to like irritations may not develop comparable leukoplakias or keratoses. I am not convinced of the part that tobacco, faulty teeth, and dentures play in the formation of leukoplakia. Leukoplakia is infrequent in women, although they, of course, may have faulty teeth or wear dentures. As to tobacco, time may give us the correct answer now that smoking among women is so popular. Syphilis is definitely a cause of leukoplakia and glossitis of the tongue, and a certain percent of carcinomas develop on this favorable soil. I have found percentage figures ranging from 3.5% to 92% for the association of syphilis and carcinoma of the dorsum of the tongue. This seems a wide discrepancy, but there is no doubt that a considerable percent of carcinomas do develop upon a syphilitic background. Boyd[2] says, quite correctly, I think, that when a patient with a chronic ulcer on the dorsum of the tongue is found to have a positive Wasserman to regard it as malignant until proved otherwise. I have seen a patient with heavy, thick syphilitic leukoplakia on the tongue develop carcinoma at two separate sites right "under my eyes." Irrespective of the Wasserman reaction, however, a chronic mouth ulcer in a male over 50 years of age should be biopsied. Ulcers in younger people or of shorter duration may respond favorably to silver nitrate, but if they do not respond in a reasonable time a portion of the ulcer, its edge and adjacent tissue should be excised for histological study. A person with well developed leukoplakia should be advised to be examined at intervals or whenever some change such as heaping up, increase in size, or cracking occurs. Treatment directed toward clearing up the leukoplakia, such as stopping the use of tobacco, frequent rubbing and scouring with soap, and the ingestion of vitamine containing fresh whole milk, carrots and cod-liver oil is, in my observation, only occasionally successful. But such treatment serves the purpose, at least, of making the patient mouth and cancer conscious, so that he can catch early any special change in the nature of the leukoplakia. In going over Dr. Bloodgood's records in his laboratory at John Hopkins Hospital I find that he was highly encouraged over the prevention of skin carcinoma from keratoses by simply using frequent cleansings with soap and water followed by alcohol, but as much cannot be said of such treatment for leukoplakia.

In general, it may be said that carcinoma of the tongue involves the lateral margins most frequently, then the base, then the top. The stage or degree of advancement of the disease is more important than the position on the tongue.[4]

TREATMENT

The proper treatment for intra-oral carcinoma is, I believe, the following: For carcinoma of the tongue in an early case without demonstrable metastases excision with the scalpel, cautery, or electro-surgical current should be as good as any. A wide margin should be allowed for. Unfortunately, due to the extremely rich lymphatic drainage and the constant muscular movements, metastases may be present early or present evidence of their presence after the primary carcinoma has been removed and it was hoped that a cure had been effected. Some physicians prefer to treat the neck for the possibility of metastases even though there is nothing palpable to warrant the impression that metastases are present. Others prefer to wait until you "see the whites of their eyes," meaning to reserve irradiation until more definite indications are present. Having seen carcinoma recur post-operatively right at the time when X-ray therapy was being used, I am not convinced that prophylactic irradiation can be of much value.

For larger sized growths irradiation followed by surgical excision or insertion of radon around the tumor is probably best. Or the radon could be inserted around the tumor and followed later by X-ray therapy. Direct contact application of radium or the use of a radium "bomb" is not indicated here. The question of operability of neck metastases is similar to that described in my article to be published in a future issue of SOUTHWESTERN MEDICINE on "Tumors of the Lips." The two major contra indications are: (1) fixation of the node signifying that the carcinoma has broken through the capsule of the gland, and (2) bilateral nodal involvement. I am not acquainted with the implantation of radium or radon into the glands, but this method is practiced at Memorial Hospital in New York. We all must admit, however, that the presence of neck metastases denotes a very poor prognosis in spite of any method of treatment. It has been asserted, however, that the five-year "cure" rate for tongue cancer in the best clinics has risen in the past 25 years from 10 to 26% of all cases.[5]

The treatment for buccal and alveolar carcinoma is more satisfactory. Neither metastasizes so readily as tongue carcinoma. Surely if we can do anything for our cancer cases it should be in those cases in which metastasis does not have to be combatted with such regularity. Contact radium therapy and/or X-ray therapy usually controls these carcinomas. Some may be entirely removed by surgery or electro-surgery. Low voltage, "contact," X-ray therapy as is obtained with the Chaoul tube is successfully used by Widmann at the Philadelphia General Hospital. He, however, restricts his cases for this type of therapy to those which show a minimum amount of infiltration, say up to ½ cm., as this irradiation is more of the superficial rather than the penetrating type.

It is commonly believed, I think, that lymphosarcoma of the tonsil is the usual malignant neoplasm of the tonsil. Park and Le Fevre,[6] however, found that carcinoma of the tonsil accounted for 9.64% of intra-oral lesions, which was ten times the incidence of lymphosarcoma. Possibly lesions formerly diagnosed as lymphosarcoma are now being calley lmpho-epitheliomas (or transitional carcinomas). The fact, too, that epithelium comprises a large part of the tonsil lining the the outside and dipping into the crypts with their branches, affords bountiful opportunity for carcinoma of this region. Extension of tonsil carcinoma is frequent to the tongue or across the anterior pillar to the buccal mucosa. When one is confronted with a large neck nodule of undetermined origin the search must be exhaustive for a small lympho-epithelioma of the tonsil or pharynx. I find Bloodgood stating that he never cured a carcinoma of the tonsil by surgery. X-ray therapy and interstitial radium or radon constitute the best treatment. Duffey[6] gives the five-year survival rate as 20.4%.

There is no part of the body which presents such a wealth of pathology as the oral cavity. Affections picked up in the mouth may be the key to an otherwise obscure diagnosis. When "looking at the tongue" it pays dividends to take a little better look all around the oral cavity.

The Johns Hopkins Hospital.

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Blind Nailing of Fractures of the Neck of the Femur

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FROM the standpoint of improvement in end results, one of the most striking advancements in the treatment of fractures in the last 20 years is the treatment of fractures of the neck of the femur. Up until 1918 the treatment of these fractures was very unsatisfactory. There was no standardized method of treating them and only a small percentage of cases got solid bony union. Some men employed the application of a spica cast to the

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hip, while others treated the patient with traction in bed. Due to the high percentage of poor results with treatment many men were satisfied to do no more than make the patients as comfortable as possible and let them go ahead to a non-union. The first great advance in the treatment of fractures of the neck of the femur came in 1912 when Whitman introduced his abduction method of treatment of these fractures. He analyzed the mechanism of production and reduction of these fractures and showed that by manipulating the hip with traction in flexion and then internal manipulating the hip with traction in flexion and then internal rotation, followed by extension and abduction, a very satisfactory reduction of the fracture could be obtained. He further showed that after reduction, by simply holding the hip abducted and internally rotated, it was possible to keep the fracture in good position. The method he employed to retain this position was a double spica cast with the foot included on the affected side. This method improved the percentage of good results, and firm bony union was reported in from 40 to 60 per cent of the cases.

Although efforts at internal fixation had been made, no definite advance in the treatment of these fractures occurred until in 1931. In this year N. M. Smith-Petersen of Boston, Mass., first brought out his method of treatment of these fractures by holding the fragments together with his three-flanged nail. In his original method the hip was exposed through a long anterior incision and the fracture site opened widely and the fragments brought into position. The nail was then driven in under direct vision. The three-flanged Smith-Petersen nail was quickly taken up by many other workers in the field and the technique improved upon. Johansson of Gothenburg, Sweden, conceived the idea of putting a hole through the center of the Smith-Petersen nail. The purpose of this hole was to allow the preliminary insertion of a guide wire across the fracture site, over which the nail could be fitted. In order to do this operation a small lateral incision is all that is necessary. This blind nailing, as it is usually called, is entirely dependent for success upon the use of the X-ray to ascertain exactly where the guide wire is placed. In 1932, the same year in which Johansson brought out his modification of the nail, Leonard and George introduced a new and more satisfactory method of making lateral X-rays of the hip joint by the use of a curved casette. These curved casettes, or film holders, in combination with the modern shockproof X-ray equipment, makes it possible to get excellent lateral roentgenograms of the neck of the femur. Since that time numerous small modifications and improvements have been introduced until at the present time the introduction of the Smith-Petersen nail in the case of a fracture of the neck femur is a relatively innocuous procedure from the standpoint of producing shock.

There is nothing more deplorable than to see an aged person in relatively good health have the great misfortune of breaking his hip, and having it fail to unite. If this occurs he is doomed to walk with one or two crutches for the rest of his life, and is a permanant cripple. The high percentage of firm bony union obtained by the use of the nail has changed this picture entirely. In fractures in which the Smith-Petersen nail is properly placed a good solid union with an excellent end result may be expected in approximately 85% of the cases. There are some contra-indications to the use of the nail, the chief one being a very poor physical condition of the patient. In those old people with severe constitutional disease, as heart disease, kidney disease or other infirmity of sufficient magnitude to make them a very poor operative risk, this procedure is not advisable. On the other hand, any person whose physical condition is fairly good and can be expected to stand a moderate sized spinal anaesthetic will usually go through the nailing of the hip without incident.

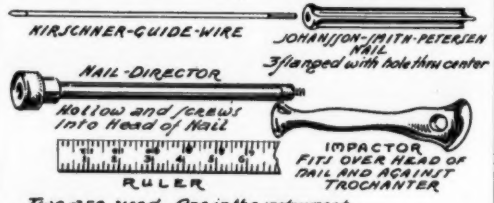
HIP FRACTURES CLASSIFIED

Fractures in the region of the hip are divided into two main classes: Those of the neck; that is, those lying in the area from the head to the upper part of the shaft of the femur or trochanteric region, and those lying in the region of the trochanter itself. Fractures of the neck of the femur and fractures in the region of the trochanter are entirely different as to their treatment and prognosis. In general, the prognosis in fractures of the neck of the femur treated by the Whitman abduction method becomes increasingly worse the closer to the head the fracture lies. That is, fractures near the trochanter do much better than fractures close to the head. There is one fracture of the neck of the femur, however, which does very well. This fracture is an impacted fracture in valgus position, or with the trochanter lying more under the head than normally and the angle between the head and the shaft very obtuse. This particular type of fracture will heal without open reduction or any further treatment than simple immobilization in abduction for a period of a few weeks. Smith-Petersen nailing should be done in all other fractures of the neck of the femur where there is not some contra-indication to the procedure in the general condition of the patient or otherwise. There are many advantages to this method of treatment. In the first place, accurate reduction and fixation promptly eliminates all pain at the fracture side. These patients do not have the severe aching and cramping pains in the hip that are present in the cases where the fracture has not been properly reduced and held. The patient may be allowed to sit up immediately after the operation, preferably at the end of the first day, and this is a great advantage because it reduces to a minimum the danger of hypostatic congestion in the lungs and pneumonia. The patient can move around in bed, and the danger of decubitus ulcer forming is greatly reduced. It is not necessary to

TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR

1

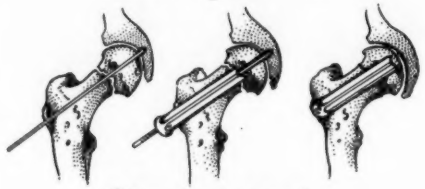
INSTRUMENTS USED IN BLIND PEGGING WITH SMITH-PETERSEN NAIL



Two are used. One in the instrument set. The other to measure X-RAY to determine length of nail needed.

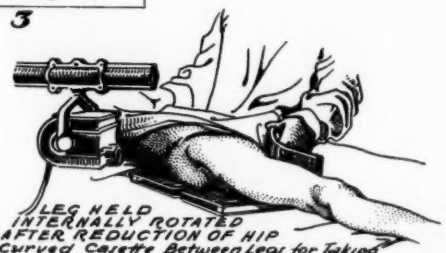
2

DIAGRAM of METHOD



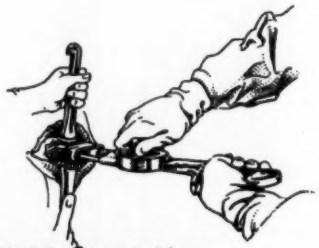
(After HENDERSON)

3



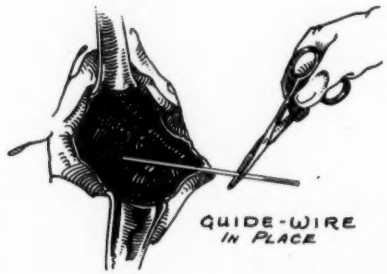
LEG HELD INTERNALLY ROTATED AFTER REDUCTION OF HIP
Curved Casette Between Legs for Taking LATERAL X-RAY Casette-Tunnel for A-P X-RAY under Patient

4



KIRSCHNER-GUIDE-WIRE being inserted.

5



GUIDE-WIRE IN PLACE

6

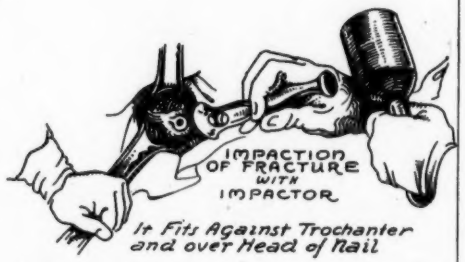
SMITH-PETERSEN NAIL AND ATTACHED DIRECTOR BEING DRIVEN INTO PLACE OVER GUIDE WIRE

7

NAIL IN PLACE

DIRECTOR has been unscrewed from NAIL and Removed. THE GUIDE-WIRE has been taken out

8



It Fits Against Trochanter and over Head of Nail

9

X-RAY SKETCHES

apply any form of fixation, or cast, in these cases after the operation, and this is of immense advantage in many ways.

TECHNIQUE OF BLIND NAILING

The technique employed in blind nailing of the neck of the femur will be described herewith. Following the occurrence of the fracture, the patient is admitted immediately to the hospital and adhesive traction or Buck's extension applied to the affected leg. Six pounds traction or so are applied to take the tension off the fracture site and make the patient more comfortable. The patient is then carefully studied from every angle and such laboratory tests done as are necessary to get a complete idea of the patient's general physical status. The patient is then observed for a period of three to six days or occasionally a little longer in cases where the physical condition is questionable. After several days and as soon as it has been concluded that the patient's general condition is sufficiently good to withstand the relatively small procedure of inserting the nail by the blind nailing method, the operation is gone ahead with. The anaesthetic of choice in these cases is spinal anaesthesia. Some men will undoubtedly object to this statement and a local or gas anaesthetic may be used if desired. As soon as the anaesthetic has been given the patient is placed on an ordinary operating table and the fracture of the neck of the femur reduced by manipulation. This is done quite easily by externally rotating the leg and then flexing it and making strong traction. The leg is then adducted and internally rotated and then extended to lie flat on the table. It is kept internally rotated strongly by an assistant who grasps the foot firmly and keeps it in position, and this prevents the fracture from slipping and re-displacing. The next step is to make antero-posterior and lateral X-rays. The lateral X-ray is made by using the curved casette which is placed between the patient's legs and pushed firmly up into the perineum. The X-ray tube head is placed close up to the patient up toward the head and is directed at the region of the neck of the femur. The method of placing the casette and tube head is clearly shown in illustration No. 3. Following the taking of the lateral X-ray the A-P X-ray is taken. This is done by placing a casette tunnel or holder under the patient's buttocks so that it lies directly under the fracture site. The casette itself is then readily slipped in and out of this tunnel without disturbing the patient. The tube head is then adjusted to lie over the fracture site and point downward on it and towards the casette. The use of this casette tunnel is very important for it allows the easy introduction and removal of the flat casette used in taking the antero-posterior X-ray without disturbing the drapes over the patient after the operation is started. This casette tunnel is likewise shown in illustration No. 3.

Following this, the patient is then prepared and draped, and the incision is made over the upper end of the femur and directly lateral to it. The incision should center over an area of about 2½ inches below the uppermost portion of the greater trochanter. It is usually necessary to make an incision at least 4 inches long to get adequate exposure. The making of the incision itself is accompanied with practically no shock inasmuch as the incision goes through skin and subcutaneously tissue only. The lateral aspect of the upper end of the femur is then exposed usually without cutting through any muscle at all. The next step is to place the Kirschner guide wire across the fracture site in the direction which the nail is to take. This is probably the most difficult and certainly the most important step in the procedure. By the time the operator is ready to place the Kirschner wire he will have back the X-rays taken immediately after the reduction of the fracture. These X-rays are carefully studied and then the area on the femur located where the wire is to enter. Using a hand drill type of Kirschner wire inserter, careful aim is taken and the wire placed, judging the direction and angle from the X-ray. Antero-posterior and lateral X-rays are taken immediately and developed as quickly as possible and returned to the operating room. If the wire is accurately placed the operator is ready to proceed with the next step in the operation. If the wire is not accurately placed as shown in both the A-P and lateral X-rays the wire should then be redirected. If it is necessary to redirect the wire it is wise to lay a sterile wire on top of the drapes on the patient in the exact direction in which the first wire was placed, so that when it is removed and the second attempt at placement of the wire made its direction may be compared to the course of the first wire. The wire should be redirected until accurate placement is obtained. The wire does not have to be placed exactly in the center of the neck of the femur, but should be placed fairly close to this area. After a little experience it is very rarely necessary to make more than two attempts and practically never necessary to make more than three to place the wire accurately. Illustration No. 4 shows the placing of the Kirschner guide wire with the hand drilling, and illustration No. 5 shows the guide wire in place.

After the guide wire has been accurately placed the next step in the procedure is to determine what nail to use. At least four nail sizes should be in every operating set, the sizes being 3 inches, 3¼ inches, 3½ inches and 3¾ inches. Before starting the operation the length of the area where the wire is to be placed should be measured to make sure that a nail longer or shorter than the extremes of these four nails is not going to be necessary, and if it is going to be needed a larger nail should be included. An assistant who is not scrubbed up to help at the operation carefully measures on the A-P X-ray taken after reduction the distance from the point of entry of the guide wire into the femur to the deepest point in the head of the femur where the guide wire points. A nail is used which is one-

half inch shorter than this measurement. The reasons for this difference are that the nail should only extend within a quarter of an inch of the acetabulum and that a quarter of an inch is accounted for by the magnification of the nail in the X-ray, due to the projection of the nail on the X-ray film. A steel rule is included in the instruments sterilized for performing the operation and this is used to measure the sterilized nails to select the right one.

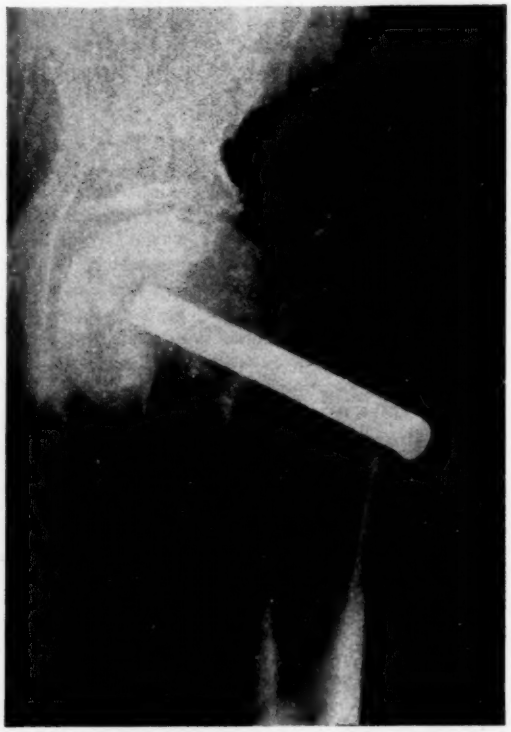
The end of the nail has a small hole in it which is threaded to receive the long shaft of the director which fits onto it. The director is a long steel rod and it and the attached nail are carefully threaded over the Kirschner guide wire. Just before doing this, a small chisel is used to make a cut at the point of entry of the wire into the bone. Cuts are made in three directions to correspond with the flanges of the nail. The nail and impactor are then driven into the cortex with firm blows from a heavy mallet and on over the Kirschner wire into place. The director is then removed and the Kirschner wire pulled out. Check-up X-rays are made at this point to make sure that the nail itself is in proper position. By looking at figure 6 the director and nail may be seen being driven into the femur over the Kirschner wire. Illustration No. 7 shows the director and wire removed and the nail in place. As soon as the A-P and lateral check-up X-rays are brought from the developing room they are carefully inspected and if everything is satisfactory the fracture site is impacted. This is done with an impactor, which is a heavy instrument with a hole in its end which fits loosely over the Smith-Petersen nail and does not make contact with it. The surface of the impactor is molded to conform with the lateral surface of the femur. This impactor is fitted over the nail and against the femur, and several firm blows made upon it to snug the portion of the femaral neck on the trochanteric side up against the capital portion of the neck. Following this, the nail is again given two or three blows to snug it into place. Illustration No. 8 shows the impactor in use.

This completes the operative procedure. The wound is closed in layers and a dressing applied. No cast is necessary and the leg is left entirely free at the end of the operation.

One of the most important phases of the operation is getting the X-rays back from the developing room as quickly as possible. By slightly overexposing the X-rays and developing them as quickly as possible, they may usually be had back into the operating room in less than 5 minutes. Paper negatives and warm developing solutions have been used to further speed things up, but, in general, these are not entirely satisfactory. Accurate X-ray control is absolutely necessary in order to do the procedure of blind nailing of fractures of the neck of the femur. Illustration No. 9 shows the anterior-posterior and lateral X-rays of the Kirschner guide wires in place and also of the nail itself in place. It is true that the operation is somewhat tedious and often time consuming if it is necessary to redirect the wire several times. However, with the patient under a spinal anaesthetic and with only a very minimum amount of actual operative work being done there is very little shock.

POST-OPERATIVE CARE

Following the operation the patient should be kept in bed for four to eight weeks, but may sit up in bed, and is encouraged to do so. He may be allowed to get in a wheel chair at the end of this time. If the X-ray at the end of three months shows no change in position and apparent beginning union, the patient may be allowed up with crutches. Weight bearing should not be commenced until



X-Ray of Case 1

there is evidence of firm union in the X-ray. It is unquestionably true that weight bearing may be begun immediately after the operation, but it is unsound physiologically to start weight bearing before there is some evidence of union, and it is much safer to wait. Blind nailing with the Smith-Petersen nail may be done as late as eight weeks after the fracture has occurred with good assurance of obtaining bony union. Many cases have been reported in which delayed nailing was done and a good result obtained, but in very late cases there is less chance of obtaining union. In cases operated on a month or more after receiving fracture it is usually safer to apply a Buck's extension traction

to the leg after the operation and leave a six-pound weight on the leg for six weeks or so. This serves to take some of the stress and tension off of the fracture site and the nail by reducing the muscle spasm about the hip. There is a great deal of discussion as to whether or not in older cases it is better to do an open reduction, expose the fracture site widely, and remove all the fibrous tissue between the bone ends. Many people believe that this is best, but there are others who have had very good results by simply inserting the nail blindly across the fracture site disregarding the fibrous union. Following this, union usually occurs very satisfactorily. In general, open reduction with freshening of the bone ends should be reserved for those late cases in which there is some special indication.

The matter of when to remove the nail is also a point over which there is some controversy. During the first few years of use of the nail it was advocated that the nail be removed at the end of nine months to a year. However, in a few cases after removal of the nail a separation of the fragments has occurred, so that now the tendency is to leave the nail in permanently. If there is any special reason to remove it, it may be readily removed under local anaesthesia without difficulty. However, since it is one piece of stainless steel it is usually not irritating and there is no particular reason for taking it out. In general, it is much better to remove any metal which is left in bone, but in these old people in which solid union is of so much importance it is safe to go ahead and leave the nail in.

CASE REPORTS

Two cases are being reported which illustrate special features:

CASE ONE: Mr. C. K., age 75, was injured on July 9, 1938, when he stepped off a street car and fell down. He landed on his left hip and had immediate pain. He was taken to the hospital, where the fracture of the hip was reduced under a general anaesthetic and a Whitman abduction applied. This cast was left on six weeks and was then removed and check-up X-rays taken. The X-rays showed no union whatever and the femur had ridden up on the head about three-quarters of an inch. At this time the case was referred to the writer by the general surgeon who had him under care. Two X-rays were made, one with a strong down-pull on the leg and one with a moderate up-push on the leg, and these two X-rays compared. There was found to be about one-half inch motion at the fracture site as revealed by the X-rays. It was decided to perform a blind nailing with a Smith-Petersen nail on this patient inasmuch as he was in good physical condition. The patient was given a spinal anaesthetic consisting of 150 milligrams of novocaine crystals dissolved in spinal fluid. The patient was placed on a fracture table and strong down traction made on the affected leg. Check-up X-rays were taken which showed the fracture to be in good position. The operation of blind nailing with a Smith-Petersen nail was done and check-up X-rays showed excellent placement of the nail. The patient was not bothered at all with the operation and left the operating room in fine condition. He had no post-operative shock and was able to eat a light supper on the day of the operation. On putting him to bed a Buck's extension was applied to the affected leg with eight pounds traction. The day after the operation the patient was propped up well in bed and motion begun in the affected leg to a slight extent. This motion was increased gradually. The patient was kept in bed three months, at the end of which time the X-ray showed a good deal of bony union with trabeculae crossing the fracture site. He was then gotten up with crutches and at the end of another six weeks was walking without crutches and with no pain and practically no limp. This case is presented particularly to illustrate the fact that this procedure is very useful even as late as seven weeks after the fracture has occurred. Attention is called to the fact that this patient was done on a fracture table and that traction was applied to secure good position of the fracture. This was done because the case was seven weeks old. Adhesive traction, Buck's extension was also applied for the same reason.

CASE TWO: Mr. E. S., age 68, was injured in a fall in his house on May 12, 1938. He was brought to the hospital in considerable pain and in a state of great agitation. He was put to bed and carefully observed. It was apparent that his general condition was only fair and he had a grade one alubumin-uria. In addition to this he had a senile psychosis of a moderate grade. He was not very irrational, but he was quite difficult to manage, in that he would refuse to take advice or follow instructions. He was quite affable and agreeable, however, and was perfectly willing to have his hip operated upon. On the eighth day after his injury he was operated upon. He was given the same anaesthetic as case one, but was operated upon on an ordinary operating table. The fracture was reduced in the usual way and the procedure done exactly as usual. Following the operation the patient left the table in excellent condition and did not have any shock nor was he distressed in any other way. He stated that he felt very comfortable the next day, and on the third day after the operation he got up and walked about the room without asking anyone permission to do so. He was severely reprimanded for this and advised to stay off his hip but he said he wanted to walk around on it, and every time he was not closely watched he did so. Check-up X-rays were taken at the end of a week, which did not show any change of position. Inasmuch as the patient absolutely refused to co-operate by staying in bed, and inasmuch as it was impossible to watch him closely enough to keep him in bed, he went ahead and walked on the hip from then on. He was given crutches and told to keep off the leg, and he followed this advice to a certain extent in that he used one crutch most of the time. Check-up X-rays at the end of three months showed a good deal of union, and two months later the hip appeared to be perfectly solid in the X-ray, and the X-ray showed many trabeculae of bone extending across the fracture site. The patient has complained of a small amount of stiffness and occasional aching pain in the hip, but walks practically without limp and painlessly. This case was presented particularly to illustrate the extreme stability of the fracture site after nailing with a Smith-Petersen nail. Although very early weight bearing is not to be advised or even condoned, this case demonstrates that it is possible to begin weight bearing immediately after the operation and still obtain excellent bony union in good position.

SUMMARY

The history of the treatment of fractures of the hip is briefly reviewed.

The operation of blind nailing with the Johansson type of Smith-Petersen nail is discussed and

the technique described in detail. Illustrative drawings are presented.

Two cases are presented showing some unusual features. One of these cases had a senile psychosis and could not be made to follow instructions. He walked on his hip the third day after the operation and continued walking on it from then on with no harmful effects.

Roberts-Banner Bldg.

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Diagnosis and Treatment of the Pneumonias*

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IN THE following discussion I shall try to avoid the terms, "lobar pneumonia" and "bronchopneumonia," preferring to use a classification based on etiology rather than distribution of the pathological lesions. Cecil is reported to have once said, "If I must have pneumonia, I am indifferent whether it shall be lobar or bronchopneumonia, nor am I particularly concerned whether I have two or three lobes involved, but I do care very much whether my infection is caused by Friedlander's bacillus or a Group IV pneumonococcus." This statement reflects the trend of thought among students of pneumonia, and inasmuch as it is not uncommon for the pathologist to find pneumonia or pneumococcus origin with lobar consolidation on one side, and bronchial distribution on the other, the old terminology, I believe, should be discarded. Finland has recently suggested the terms *typical* and *atypical* pneumococcus pneumonia.

DIAGNOSIS

Usually the diagnosis of typical pneumonia offers little difficulty. When one sees a patient who has had an acute upper respiratory infection for a week or two, suddenly prostrated, perhaps following extraordinary fatigue or exposure to cold, complaining of pain in the chest, fever, headache, and dry cough with some shortness of breath and perhaps vomiting, all following a chill, pneumonia is the first thought. If then this patient coughs up a little sticky blood-tinged or rusty sputum, the diagnosis can be made without physical examination or X-ray. Indeed, at this stage the physical findings may be no more than slight suppresion of breath sounds and a few fine sticky rales on cough over one or another lobe of the lung. It may be twenty-four or even thirty-six hours later that signs of frank consolidation appear, giving dullness on percussion and tubular, or, if the bronchus is plugged, absent breath sounds. Until these signs of frank consolidation appear, the X-ray may be of little value, though even in the very early hours suggestive changes may be found, and films should always be ordered as early as possible. One physical sign to which little attention has been given is spasm of the rectus muscle. This symptom is often present, especially in lower lobe pneumonias, before frank signs can be found in the chest. It is often very marked, as in a recent case on my service at the Los Angeles County Hospital. In this instance the right rectus was involved, the chest pain was in the lower back and shoulder. The patient was admitted during the night. An inexperienced interne called a surgical consultant, the patient was rushed to surgery and operated upon for empyema of the gall bladder, which, of course, was not found. In justice to the surgeon I will say that X-ray films were taken before the operation and reported negative. Twenty-four hours later new films showed a definite right lower lobe pneumonia. Fortunately the patient's infection was a type for which serum was available.

PRIMARY PROCEDURES

The importance of early diagnosis is very much greater since specific serum has become available. Pneumonia is now recognized as a real emergency, to be classed with acute appendicitis and diabetic coma, for, as in these conditions, the outcome often depends upon the promptness with which proper treatment is instituted. The importance of hospitalization for a pneumonia patient can hardly be over-estimated, and should be carried out whenever possible. Upon admission to the hospital it is our custom to order the following laboratory work: sputum typing, complete blood count, blood culture, and X-ray of the chest. Orders for the general management include absolute bed rest, forced fluids (three to four thousand cc. each twenty-four hours), continuous oxygen by Lombard mask for the slightest cyanosis or a pulse rate over 120 and respirations more than 30 per minute; sodium chloride in enteric-coated tablets, thirty grains three times a day; a general diet of anything that

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*Presented before Staff of St. Joseph's Hospital, Phoenix.

the patient will relish, especially salty foods; no enemas or cathartics.

By the time these measures are instituted, if we are fortunate, the laboratory has reported the type of pneumococcus, if this be the infecting organism. If there has been no sputum, as often happens, smears should be taken from the pharynx and larynx for direct examination and culture, and the patient should be asked to cough upon a Petri dish containing a suitable culture medium. If these measures fail and an area of definite consolidation can be demonstrated by physical signs, and X-ray, lung puncture should be done. For this a 4-inch, 22-gauge needle is used attached to a 10 c.c. syringe containing a small amount of blood broth. The skin is prepared over the area of consolidation and while the patient holds his breath, the needle is plunged full length into the lung and immediately withdrawn, constant suction being applied by the syringe. The few drops of lung juice mixed with broth is then cultured and will usually give the proper type. This procedure is not without danger and should not be attempted by the inexperienced.

SERUM ADMINISTRATION

Once the type of infecting organism is established, specific serum should be administered as early as possible. Few physicians today question the value of specific serum in pneumonia and it is now available for nearly all of the thirty-two known types. Nearly all of you, I am sure, are familiar with the technique of serum administration; however, I shall briefly review the important features. Whether the serum to be used is horse or rabbit, both ocular and introdermal tests for sensitivity should be made according to the instructions which come with each package. When it is established that no sensitivity is present, 2 c.c. of warm serum should be injected very slowly intravenously. At the end of two hours if no reaction has occurred, the remainder of this package of serum should be given. Two hours later 40 to 60 thousand units should be given and this repeated every two hours until the estimated dose has been administered. Next in importance to the early administration of serum is adequate dosage. How does one determine when sufficient serum has been administered in given cases? For example, a Type 1 pneumonia in which treatment was started on the second day will often show a dramatic drop in pulse, temperature and respiration after 40 or 60 thousand units of serum. Not long ago it was thought if such a patient's serum caused tight agglutination of Type 1 pneumococci in culture, that this was an indication that no more serum was needed. However, the agglutinins are not the only antibodies present in anti-pneumococcus serum. We know of at least two other protective substances, a mouse-protecting substance and a pneumococcidal substance, which renders the pneumococcus susceptible to phagocytosis. If one depends entirely upon the presence of a sufficient amount of agglutinins he will occasionally find that he is not giving a curative dose of serum and valuable time will have been lost. The Francis test is used in some hospitals to supplement the agglutination test. This is an intradermal infection of 2 c.c. of 1/1000 dilution of specific soluble substance. The appearance of a wheal in 20 minutes indicates presence of antibodies.

At the present time one of our senior students who has reviewed all the pneumonias treated with serum in the Los Angeles General Hospital is working out a formula by which it may be possible to determine in every case the adequate dose of serum when administered in a given time. I hope this study can soon be published. Until we have some such formula the safe procedure is to give more rather than less the estimated dose. Here it might be well to briefly mention those conditions which call for more than the average estimated dose. These are six in number. 1. Administration after the third day of onset. 2. Involvement of more than one lobe of the lung. 3. Positive blood culture. 4. Administration to patients over 55 years of age. 5. Pregnancy. 6. Infection with Types II and III.

Response to serum therapy when instituted early is usually dramatic. Should the temperature, pulse and respiration fail to drop to normal or near normal within 24 hours, the sputum should be re-typed. It will usually be discovered that the first typing was an error or that multiple infection with two or more types is present. This occurs in about 35% of cases.

One of the most difficult questions that arises in the serum treatment of pneumonia is whether or not to give serum to patients seen for the first time after the fifth day of onset. Many of these cases are seen in a large general hospital. Most of them are desperately ill and the majority will die regardless of any treatment. These cases, if given serum at all, should be given enormous doses, not less than 500,000 units, and this is very costly. However, such a patient can occasionally be saved by serum, I believe, and we have taken the attitude that the cost of serum is no greater than the cost to the county taxpayers of a burial and the support of whatever dependents the patient may have. Of course, serum should not be wasted on a patient obviously in extremis.

Before leaving the subject of serum therapy I wish to briefly review our experience with specific antipneumococcus serum on Ward 7600 at the Los Angeles General Hospital from August 1, 1938, to January 12, 1939. This ward is one of two wards in the hospital devoted to the treatment of pneumonia and other acute respiratory infections. Of late, since serum has been available for many of the higher types, it has not been unusual to have as many as twenty serum treated cases on the ward at one time.

The tables shown below are self-explanatory

PNEUMOCOCCIC PNEUMONIAS
Aug., 1938, to Jan., 1939

94 pneumococcic pneumonias, 90 typed out as follows:

Type 1	21	Type 14	2
Type 2	5	Type 17	2
Type 3	8	Type 18	3
Type 4	6	Type 19	1
Type 5	4	Type 20	2
Type 6	2	Type 22	1
Type 7	16	Type 24	2
Type 8	7	Type 25	2
Type 9	3	Type 29	2
Type 12	3		

76 SERUM TREATED CASES

Treatment Begun		Deaths	Mortality
1st day	3	0	
2nd day	13	0	
3rd day	12	1	
4th day	7	1	
5th day	10	1	
Total	45	3	6.6%
6th day		1	
7th day		1	
8th day		1	
9th day		2	
12th day		1	
15th day		1	
Total	31	7	22.5%

18 cases no serum, 6 deaths, 33%.

CHEMOTHERAPY

Since the discovery of sulphanilamide it has been used as a specific in pneumonia caused by the streptococcus beta. I am not acquainted with any large series of cases adequately controlled which demonstrates its value, but judging from those cases I have seen it is certainly worthy of a trial. Any discussion of the specific treatment of pneumonia would be incomplete without mentioning sulphanilamide, M B 693, or Dagenan, as it will be known in trade. I have used Dagenan in one case of atypical pneumonia in a woman 75 years of age, due to pneumococcus Type VI, in one Type VIII, and in one Type XIX, in one Type III too late for serum, and in two other cases of undetermined type. These cases, some of which were desperately ill, are all convalescing. A personal communication from Bullowa states that he has been using Dagenan, alternating with serum cases for control, in some types. He believes that an opinion as to its value at this time would be entirely premature. He has seen severe anaemia, neutropenia and one case of severe hemolytic icterus with hepatitis caused by the drug.

Theoretically the ideal treatment for pneumonia would be a combination of serum and a bacteriostatic drug such as Dagenan is said to be.

Pneumonias due to staphlococcus and Friedlander's bacillus have not in our experience responded to sulphanilamide. I have seen one case of staphlococcus pneumonia, which as you know has an extremely high mortality, recover, following the use of a large amount of pylyvalent staphloccus antitoxin. This patient's improvement seemed to begin at the time the antitoxin was started.

SYMPTOMATIC TREATMENT

Occasionally in the treatment of pneumonia, both typical and atypical, situations arise which demand special consideration. Pain and cough often interfere with rest. These two symptoms are usually the only ones which require attention in the early days of the attack. Partial strapping of the chest, together with heat or counter irritation, will often give relief. However, the strapping should not be so extensvie as to cause atelectasis and spread of the pneumonic process. Codeine in doses of ¼ to ½ grain by hypodermic will usually be sufficient to control the cough, which is more troublesome in the atypical pneumonias. Morphine should be avoided because of its depressing effect on respiration.

Hyperpyrexia can be treated by tepid sponging or the alcohol fan. Salicylates and other antipyretics as a rule should be avoided except in cases where a very high temperature exists at the time serum is to be administered. Here it may prevent a fatal hyperpyrexia should a thermal reaction follow the use of serum.

For restlessness and insomnia the barbitals will usually suffice. It is essential that the patient secure six to eight hours sleep and it may be necessary to resort to chloral or to paraldehyde which can be administered intravenously. Occasionally a patient will become wildly delirious. Such a patient, instead of being strapped in bed and allowed to exhaust himself, should be given one-half anesthetic dose of avertin by rectum; again, morphine should not be used.

Abdominal distension can be a very distressing symptom. It is an indication of severe toxemia and should cause the greatest concern to the attending physician. In my experience this complication has been much less frequent since the routine use of large amounts of sodium chloride and forced fluids. Enemas and cathartics seldom give even temporary relief and are to be avoided because of the fatigue which they cause the patient. The use of prostigmine, 1 c.c. of 1:2000 solution every two to four hours subcutaneously, followed by the insertion of the rectal tube will sometimes give relief.

SHOCK IN PNEUMONIA

When, in spite of all our efforts, a pneumonia patient goes from bad to worse, the blood pressure drops, the pulse becomes more rapid and perhaps irregular, the abdomen more distended, the skin pale and moist, what has happened, and what can be done about it? Pneumonia patients die, either of sepsis with its later complications such as empyema, pericarditis and meningitis, or they die of medical shock.

The state of shock has been defined as the physiological result of an acute disparity between the circulating blood and the functioning capacity of the vascular bed. Probably the first description of medical shock is contained in a letter to the London Medical Gazette in the year 1831. written by W. B. O'Shaughnessy of New-Castle-upon-Tyne, entitled, "Experimental Inquiries into the Cholera." By his observations O'Shaughnessy demonstrated in cholera patients, dehydration, salt depletion, acidosis and urea retention. As a substitute for the brandy and laudinum treatment then in vogue, he

advocated the injection into the veins of tepid water holding a solution of normal salts of the blood. Unfortunately this rational treatment did not come into general use until 1909, when Rogers, Nichols and Andrew used it very successfully in a cholera epidemic in the Philippines. Janeway was the first in this country to recognize the futility of heart stimulants in acute infectious diseases. In 1907 he wrote in the New York State Medical Journal: "We must in most cases abandon the idea of cardiac death at the height of acute infectious disease such as pneumonia, typhoid fever and septic fever. In place of heart failure, we must write vasomotor failure."

In pneumonia the state of shock is brought about by damage to the capillaries, both peripheral and visceral, as a result of the combined effect of anoxemia, deficiency of the suprarenal cortex, and the direct action on the capillary walls of the toxin produced by the infecting organism, in the case of the pneumococcus, the so-called specific soluble substance. Just which of these factors plays the greatest part is not known, but it probably is the bacterial toxin. Atchley reports the case of a laboratory investigator who gave himself a large dose of pneumococcus vaccine intravenously. He immediately developed alarming symptoms of shock. The systolic blood pressure dropped to 60 mm. and remained below normal for three days; also numerous petechial hemorrhages appeared in the skin.

Perry has made an interesting observation on the effect of clinical pneumococcus pneumonia on capillary tone. A drop of adrenalin (1:1000) was placed on the skin of the forearm and a needle prick made through the drop, causing a small area of blanching. The cuff of a sphygmomanometer was then applied above the elbow and the venous pressure in the forearm raised until the blanched area disappeared. In 26 pneumonia patients the pressure required ranged from 20 to 70 mm., as against 80 to 100 mm. in normal controls. It was also noted that, as a rule, those individuals in which lower pressures (20 to 40) were required, all died, while those in which pressures of 40 to 70 mm. were required, generally recovered. However, in the cases which recovered, it required an average of fourteen days for the capillary tone to return to normal.

In medical shock the capillaries not only lose their tone but their walls become so permeable that blood plasma is lost into the tissues, and thus we have at the same time an increase in the vascular bed and a decrease in the circulating medium.

"Pulmonary oedema" is a term commonly used to describe the wet lung which occurs a few hours before death in fatal pneumonia, or, rarely, at the critical stage of a case which recovers. This condition is characterized by coarse rales over those portions of the lung not involved in the pneumonic process, and an increase in dyspnoea and cyanosis. Such a lung at autopsy has exactly the same appearance as the lung of a patient dying in shock from an extensive burn or other cause. This wet lung in pneumonia should not be confused with the acute pulmonary oedema occurring in hypertensive heart disease and often successfully treated by morphine and phlebotomy. The wet lung in pneumonia is simply a manifestation of the general capillary failure which is present in all the organs and tissues of the body. Other signs of medical shock seen in fatal pneumonia are dusky pallor, sweating, rising pulse rate with a galling systolic, blood pressure, diminished output of urine, and an increase in the hemoglobin and erythrocytes.

What of the treatment of vascular failure in pneumonia? If digitalis and other cardiac stimulants are useless, what, then, can be done? As in most medical emergencies, the best treatment is prevention. Experience has shown that forced fluids, adequate amounts of sodium chloride, the generous use of oxygen, and the early use of specific serum will save approximately one-half of the cases that were lost before these measures came into general use.

Once the signs of shock have appeared, little can be done to save a patient. Hypertonic solutions of sucrose and sodium chloride intravenously and caffein in large doses may, rarely, save a life.

The value of vaso-constricting drugs is doubtful, though they definitely raise the systolic blood pressure for a time in some instances. Atchley states that the use of adrenalin and drugs having a similar action is not helpful, and, in fact, may be harmful as the vessels which they affect are already constricted to the disadvantage of the capillary circulation. This has been shown experimentally to be the case in respect to the capillaries of both the skin and viscera. In this way blood volume is decreased and shock is exaggerated.

In conclusion, I wish to repeat that the early deaths in pneumonia are due to medical shock, that heart stimulants, particularly digitalis, are not only useless, but probably harmful except in such cases as give definite indications of congestive failure. Even auricular fibrillation, when this arrthymia is the result of toxemia, is not an indication for digitalis therapy, though quinidine may prove useful. The value of vaso-constricting drugs in medical shock is at least doubtful and our chief dependence must be placed on measures which prevent fluids from passing from the blood vessels into the tissues.

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"DEPRESSION OR NO DEPRESSION"

Since 1930, month after month, a unique series of educational-to-the public advertisements have appeared on the first page of Hygeia. The sponsor's name, Mead Johnson & Company, has to be looked for with a magnifying glass, and appears only for copyright purposes. Not a product is ballyhooed. Instead, appears good, clean, convincing reasons, with choice illustrations, why mothers should seek pediatric advice *from* their physician.

Hormones in Pregnancy

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DEVELOPMENTS in the hormone field have been so enormously rapid in the past twelve years that to evaluate the present status of the hormones in their control and regulation of pregnancy is not only difficult but discouragingly confusing and perhaps impossible. Hundreds of articles have appeared in the last three years on the subject. They have illuminated many dark and uncertain phases of reproduction and gonad activity, but even in the best and most reliable journals the wheat and chaff have not been separated. These innumerable reports are confusing even to the expert engaged in full-time research in endocrinology, so that we who are on the "side lines" are fairly bogged and overcome in confusion. The average practitioner frequently turns to the advertising literature and to the "detail man" for information, and he is much impressed by the information which is given as positive and clear cut. However, in most instances these advertising circulars are erroneous, and if not distinctly erroneous they are entirely too optimistic in their claims for what their hormone product will do.

In addition to these advertisements from the so-called ethical houses, the clearly unethical and quack business concerns find ready and listening ears among the doctors. All sorts of quack journals find their way to the doctor's desk. These scientifically worded advertisements are forced upon the confused and unsuspecting doctor who does not have time to critically evaluate the nature of the preparations expounded.

Before we can be in any degree capable of administering to patients extracts of endocrine glands or the actual chemical hormones themselves, we must know something about their nature and their actions in the normal human being. We must know when they are present normally and when not, and something about how they act and what symptoms are likely to be caused by their absence, by their superabundance, or by a moderate insufficiency. Thus, to properly use insulin the normal action of the pancreas must be understood. Only then can the pathological state of the diabetic be understood and remedied. The same is true of thyroid substance or Thyroxin in Myxedema, and likewise for parathormone in hypo-parathyroidism and of supra-renal extract in Addison's disease.

HORMONES CONCERNED IN PREGNANCY

In obstetrics we are concerned primarily with the glands controlling the menstrual cycle. The hormones active in pregnancy are apparently the same as those occuring in the normal non-pregnant female except that they occur in different concentrations and in different states of balance.

The hormones I refer to are 6 in number, 2 ovarian, 2 pituitary and 2 more like those from the pituitary, but due to the fact that they are not exactly like the pituitary hormones, are spoken of as "anterior-pituitary-like" gonadotropic hormones. These last two are formed mainly in the placenta and are, therefore, typical of the pregnant state. The two ovarian hormones have finally come to be called estrin and progestin. Progestin is also known in more correct chemical terminology as progesterone. Estrin still goes under the various names of folliculin, follicle hormone, menformone, progynon, theelin, etc. Estrin is really not a female sex-hormone as it has been found in the testis, male urine, the placenta, corpus luteum and even in plants. The pituitary hormones are known as Prolan A, or follicle ripening hormone and Prolan B, or luteinizing hormone. Prolan A is active in the first half of the menstrual cycle and causes a growth of the primordial graffian follicle. As the follicle ripens it produces estrin in increasing amount which serves to depress the Prolan A activity of the pituitary. This allows Prolan B. to become active which luteinizes the follicle causing an increase in progestin. Under the direct influence of estrin and progestin the endometrium undergoes development. There is a hyperplasia of the endomentrium, with marked increase in thickness, in vascularity and an actual hypertrophy and hyperplasia of the endometrial glands themselves. In the middle and latter half of the cycle as progestin becomes dominant certain premenstrual changes occur in the hyperplastic glands. These take on a definite secretory appearance, marked microscopically by columnar epithelium with basilar nuclei, vacuolization of the cells, distention of the lumina by secretion and a distinct "fuzziness" of the inner gland borders. These are all progestational changes. A normal type of premenstrual endometrium obtained by biopsy indicates a normal ovarian cycle, correct balance between estrin and progestin and a correct relationship between pituitary and ovary. Recently various writers have been able to say whether or not ovulation has occurred by studying the premenstrual endometrium.

If pregnancy occurs, and presumably this can occur only within the inter-menstrual time, the corpus luteum goes on to further development until about the third month when it regresses and the placenta then assumes the burden of progestin production.

The work of Ehrhart and Fisher is of prime importance[1]. They determined the content of progestin in placentas taken from different months of gestation and found those up to about the fourth month contained practically none; those between the sixth and eighth months contained the most, and that placentas from term pregnancies contained very little. This work points to an explanation of why most spontaneous abortions occur between the second and fourth months of

pregnancy, for that is the time when the corpus luteum is degenerating and the placenta beginning to assume its function. All experimental evidence shows that it is progestin that is directly responsible for the growth of the uterus especially in early pregnancy; that it is the direct cause of inhibition of uterine activity and motility and that it causes endometrial proliferation[2]. It directly inhibits uterine contractions induced by estrin[3]. Experimentally, when progestin has been injected pituitrin exerts no effect on the uterus.[5] This was determined by inserting a rubber balloon into the uterine cavity and recording the contractions on a revolving drum. Progestin will relieve postpartum pains in all cases within fifteen to thirty minutes after its injection[4].

Estrin in many ways is a direct antagonist of progestin and vice-versa. Estrin increases the irritability of the uterus and imparts rhythmic contractility to the uterus[5]. In vivo, uterine strips do not show any co-ordinated contractions when estrin is absent. In the living animal rhythmic contractions of the uterus occur when estrin is injected and these gradually die off as the estrin is excreted. Many workers have shown that there is a gradually increasing production and excretion of estrin in pregnancy as term is approached, reaching its highest level at the time of onset of labor[11 10 20]. In animals estrin produces proliferation of the milk duct system while progestion develops the alveoli of the breasts.

The understanding of the relationship between estrin and progestin has led to the most remarkable and efficient therapeutic aid in Obstetrics of all time. Commercially prepared extracts of corpus luteum, placenta or pregnancy urine containing high concentrations of progestin are being used very successfully to help habitually aborting women to carry their pregnancies. They are also being used to prevent miscarriages and premature deliveries. Failures occur, of course, but with energetic and early treatment any obstetrician will find that he can cut down his incidence of abortion and premature labor by about half. Falls[2] and his associates report excellent results in habitual aborters by using various corpus luteum extracts. He concludes that:

1. The cause of large numbers of spontaneous abortions is a deficiency of corpus luteum hormone (progestin).
2. Substitutional therapy is valuable.
3. Prophylactic therapy with progestin should be instituted in patients who have an aborting history before signs of threatened abortion appear.
4. Patients with threatened abortion should be treated with progestin until the death of the foetus has been definitely established.

AUTHOR'S EXPERIENCES

In my own work I have been using lipolutin wherever progestin therapy is indicated. I believe most of the failures I observed in its use are due to insufficient amounts. Necessarily we cannot use unlimited quantities because of its cost. In patients with histories of habitual abortion 1 c.c. weekly is given, in threatened abortion, 1 c.c. daily or every other day and the same threatened premature labor. In all, some fifteen patients were treated in the past year. Some specific case reports are of interest.

A young woman pregnant for the first time started to abort in the second month of gestation and was treated prophylactically with 1 c.c. weekly between the second and fourth months. She carried the pregnancy to term, in fact to three weeks over term.

In another instance, the patient in question had delivered her first child at 7 months. The second pregnancy started to abort at 2½ months, again at 3½ months and again two weeks later, each time accompanied by cramps and bleeding. She was treated vigorously each time with lipolutin, morphine and bed rest. She and I were both getting "fed up" and decided that next time we would do nothing and that we would let her abort. Nothing happened until the seventh month when definite contractions started and were coming every five minutes when I saw her at home. With intravenous morphine and lipolutin the labor was stopped. She carried the pregnancy to 8½ months when the membranes ruptured and she delivered after a three to four hour labor a living, viable, well-developed baby, weighing 6 lbs., 4 oz.

Another case is of interest. This patient was a habitual aborter and was treated prophylactically with lipolutin. She delivered at term; however, the baby had an atresia of the descending colon. It was operated on the 2nd day of life but nothing could be done, and it expired on the next day. Was this case one which would have aborted earlier if the mother had been left alone? In this connection, Allen and Reynolds say that in abortions many times the termination of the pregnancy is due to an abnormality of the foetus[3]. Also Kane reports a higher than normal incidence of foetal malformations in those cases which were saved from aborting[21]. He seems to think there was some abnormality of the germ plasm in the fertilized ovum. However, could not the estrin and progestin of the mother be the prime factor in improperly conditioning the development of the foetus since they have so much to do with determining the development of the maternal breasts and uterus? This conditioning factor could be at fault and be the cause of faulty development.

USES OF ESTRIN

Due to the very evident antagonistic actions of estrin and progestin on the motility of the uterus many writers have elaborated a very plausible theory explaining the onset of labor both at term and prematurely[10]. It has been shown, as previously mentioned, that the highest concentration of estrin in both blood and urine occurs at term while at that time there is very little progestin present. It is easy to see, therefore, why the uterus should go into action at a time when estrin concentration has reached a certain high level. Also, if we con-

sider that in rabbits gestation has been carried to many weeks past the normal time by the daily injection of progestin, we can see why the uterus goes into rhythmic action in its absence. Along the same lines Jeffcoate finds that abortion in humans is preceded by an abnormal rise in the blood and urine levels of estrin[20]. Reynolds has induced premature labor in rabbits by the injection of estrin. He states that estrin increases the intra-uterine tension and imparts rhythmic contractility to the uterus. Because of these and other clinical and experimental facts we are almost forced to the conclusion that the uterus is directly under the control of estrin and progestin, and that when estrin gains the upper hand the uterus empties itself. Of course, that is not the entire story. We do know that the gradual distention of the uterus is another factor enhancing the uterine irritability. This possibly explains why the incidence of twins aborting is about twice as great as would be expected in single pregnancy. and also why twins are apt to be born prematurely if carried to near term. In summary, we must regard the onset of labor as a gradual accelerating convergence of a number of influences, hormonal, physical and nutritional which must in the normal course of events result in the evacuation of the uterus.

It might be asked if estrin has been used clinically to induce labor in humans. Witherspoon failed to induce labor by this means[25]; however he used only 150 rat units, whereas the actual excretion of the hormone at term is 100 to 1000 times that amount. I found no other papers on the subject. I have tried small doses at term with indifferent results but have not as yet used it extensively.

ENDOCRINE BASIS OF TOXEMIA

I have discussed the endocrine basis of toxemia in a previous paper. Various workers have shown excesses of estrogenic hormone and of gonadotropic substances in toxemia. One man gets marked improvement by treating toxemic patients with progesterone. Shute and others find marked improvement in toxemias by giving large doses of Vitamin E[23]. He says the wheat germ oil neutralizes the excess estrin. These and other observations point significantly to a primary endocrine factor underlying the profound physical and physiological changes occurring in patients with toxemia.

In the puerperium the endocrine basis for the onset of lactation is interesting. During the first three days post partum estrin and progestin both disappear from the blood and urine, due to the loss of the placenta. This presumably removes the inhibition of the pituitary thus releasing prolactin which stimulates milk formation. Prolactin is now available for use in stimulating lactation in puerperal women. However, it is too expensive and as yet not very reliable. Ross found that 400 units given on the 6th post partum day in women lactating poorly gave no appreciable increase, 1000 units, however, produced an increase of 100 c.c. or more daily[18]. Incidentally, estrin can be used in cases where the breasts are to be dried up as theoretically it depresses the activity of the pituitary, thus releasing less prolactin.

THERAPY OF PERNICIOUS VOMITING

The subject would not be complete without mention of hormonal therapy of pernicious vomiting. Sussman observed good results with daily injections of calcium and parathyroid[13]. One group of patients given calcium alone averaged 30.5 days of vomiting. Another given calcium and parathyroid averaged 11.2 days. In my experience parathyroid therapy has been discouraging.

Freeman and Melick treated 78 patients with suprarenal cortex intramuscularly[14]. They reported unusually good results.

1. In 47 mild cases, treated orally only 2 or 4.3% were failures. In the others, symptoms disappeared in one to two weeks.
2. Fifteen moderate cases treated hypodermically were all relieved in three to five days.
3. Fifteen severe cases showing ketosis and who vomited everything ingested all were cured in three to five days.

They concluded that suprarenal cortex was an efficacious and important therapeutic weapon and that it is a more reliable and less costly an agent than any previously used. I may add that my own results, while not as good as theirs, have also been encouraging. As you have noticed, I have said nothing about etiology or causation of vomiting of pregnancy, and have still less to say about the actions of the various hormones used in its treatment.

THYROID IN PREGNANCY

Many papers have appeared advocating the use of thyroid in pregnancy[11]. Many obstetricians run routine determinations of the basal-metabolic rate and find most of their patients to be hypothyroid. If that is so, might it not be that pregnancy normally depresses the metabolic rate and does not increase is as we were previously taught. And is it not possible that this is Nature's way of making the mother less active in the interest of the foetus? On the other hand, many writers claim a much higher incidence of spontaneous abortion in hypothyroid women. This is still to be thoroughly proven, however. For the present I believe it advisable to prescribe thyroid only for those with very low rates or those with moderately low rates and excessive obesity or weight gain. I would urge caution, however, in giving much thyroid to those with only slightly reduced rates, for we may be interfering too much with normal processes. After all. we do not know thoroughly what effect the thyroid has on the other glands of internal secretion, and it is quite possible that harmful effects may be discovered in the future from its excessive use.

Any attempt to adequately explain the many interactions of the hormones is extremely difficult and when pregnancy is added to the picture the result is like some futuristic painting which only the painter can interpret.

Professional Bldg.

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Hypophysial Stalk Tumors

(Case Report)

JOSEPH G. PASTERNACK, M. D.
and
WM. M. BOLES, M. D.
New Orleans La.

TUMORS of the hypophysis cerebri usually attract the attention of the pathologist as well as the clinician because they offer interesting problems in pathologic physiology and anatomy. Cystic tumors of the hypophysial stalk may develop at any point along its course from embryonic remains of Rathke's pouch. These cysts usually arise in the suprasellar region, but occasionally they develop within the sella turcica. Depending upon their situation, symptoms may be expected from three sources: (1) intracranial hypertension, (2) disturbance of pituitary function, and (3) compression of the neighboring nervous structures.

The case reported here presented symptoms of compression; the complaint being headache and visual disturbances.

PRESENT CASE

S. C., white, male, age 55. Admitted U. S. Marine Hospital, New Orleans, La., Feb. 11, 1936. Complaint: Headache and dimness of vision. Present illness began approximately one year before admission. Frontal headaches have been frequent. No vertigo. No nausea, no vomiting. Vision has become progressively worse.

Temperature on admission 98° F. Pulse 80/min. Vision O. D. 20/160. O. S. Counted fingers at 2 feet. Visual fields:—Right homonymous hemianopia. In addition on the left there was perception for form only, no color perception. Fundi: Bilateral optic atrophy that appears to be primary. No evidence of choked disc. Neurological examination negative for pathology other than of optic nerves. Patient was moderately obese but showed no other abnormalities. Blood Wassermann: Negative.

Stereoscopic x-ray of skull, March 9, 1936: Sella apparently normal. There was a dense calcification about 2 inches above and ½ inch posterior to the auditory meatus, suggesting a calcified plaque in the falx or in the walls of the lateral ventricle.

Report of patient's record from Charity Hospital: Admitted March 11, 1935; discharged April 2, 1935. Complaint: Headaches and dimness of vision. Neurological examination showed only slight pallor of discs and right homonymous hemianopia. X-ray examination was negative for pressure or bone changes. Blood Wassermann: Negative. Spinal fluid was clear; pressure was 12 mm Hg.; cell count was 10 lymphocytes; globulin, Wassermann and colloidal gold tests were all negative.

A lesion posterior to chiasm along left optic tract or in left frontal lobe was suspected, however, patient requested discharge with no further examination or treatment.

Patient readmitted to U. S. Marine Hospital, New Orleans April 23 1937. Complaint same as on previous admission. Patient thought that his vision was worse.

On admission: Physical findings including neurological examination were essentially the same as on previous admission. The vision had apparently improved somewhat in the left eye and also the patient had gained color perception in this eye, color perception having been entirely absent on previous examinations. Visual fields otherwise remained the same, showing right homonymous hemianopia. Vision O. D. 20/160. O. S. 20/160.

Stereoscopic x-ray of skull, April 28, 1937: Calcifications previously reported, unchanged (March 9, 1936). Sella turcica negative.

Spinal fluid April 29, 1937 was clear, pressure was 12 mm. Hg., cell count was 1 lymphocyte, faint trace of globulin, Wassermann negative.

Encephalogram June 7, 1937: The left lateral ventricle was indistinct but in the stereo a fair outline was discernible and appeared normal. The right ventricle was better shown. The shadow was deformed in the anterior horn and somewhat dilated in the posterior horn. In the A. P. film the right ventricle appeared much smaller than the left, and in the P. A. position the left appeared smaller than the right. These findings agreed with the observations of the lateral films and suggested encroachment on the anterior horn of the right ventricle by a new growth.

Clinical Diagnosis: Suprasellar tumor located on the left between the optic chiasm and the optic radiation. Probably, a suprasellar meningioma.

The patient died June 8, 1937. Autopsy examination of the brain disclosed the findings recorded below.

Passed Asst. Surgeon.
Asst. Surgeon
U. S. Public Health Service.

PATHOLOGIC ANATOMY

Gross Examination. After the frontal lobes of the brain were elevated from the anterior fossae, the olfactory bulbs freed from the cribriform plate and the olfactory nerves cut the brain fell back and a greyish ovoid mass loomed into view. The mass was carefully undermined and fortunately came away intact from the diaphragm of the sella.

On inspection the cystic nature of the specimen was immediately evident. It occupied the entire interpenduncular fossa, bulging out from it. It measured 2½x4 cm. in diameter. The wall was thin and fibrous in character. Here and there in the wall clusters of small yellowish-white bodies less than 1 mm. in diameter were discernible. Adjoining the left peduncle granulation tissue-like proliferations grew from the cyst wall into the peduncle.

Careful dissection disclosed the mass to be adhered to the optic chiasm, the left optic tract, temporal lobe and peduncle. Attempts to free it caused its rupture with the escape of about 8 c.c. of turbid, watery, brownish fluid. Upon opening the cyst wall, free and attached deposits of yellowish-white granular glistening material were seen. Further examination showed the third ventricle to be practically obliterated. The lateral ventricles were enlarged and the anterior horns were prominently dilated.

Microscopic Examination. Paraffin sections of the cyst wall were stained with Weigert's acid iron chloride hematoxylin and Van Gieson's picrofuchsin, and with a buffered Romanowsky stain[1].

The cyst wall presented a variety of histologic formations. The capsule and lining consisted largely of loose, edematous fibrous and vascular foreign body granulation tissue containing cystic spaces of various sizes. Some of the spaces were filled with albuminous coagulum and others with mixtures of cholesterin crystals, necrotic and calcified tissue debris, blood, blood pigment, keratinized epithelial squames and amylaceous bodies. Throughout the wall there were foreign body giant cells and foreign body giant cell granulomata enclosing rich collections of cholesterin crystals. Dense infiltrations of lymphocytes were seen here and there. Parts of the wall were hemorrhagic and contained large thrombonecrotic blood vessels.

The striking observation was the finding of short stretches of squamous epithelium lining the wall, lining an occasional cyst, and snared off in the outlying stroma of the wall. Some of these showed all of the characteristics of epidermis, namely, intercellular prickles, keratohyalin granules, keratinization and occasionally pearl body formations. Rarely islets resembling an embryonal tooth bud were encountered in the stroma of the wall.

DISCUSSION

Certain embryogenic facts are important for an understanding of the development of hypophysial stalk tumors. The posterior lobe of the hypophysis is derived from the brain, while the anterior lobe is an off-shoot from the primitive buccal cavity. This part can be recognized as the mouth or stomodeum in the embryo by the end of the 4th week. The stomodeum is lined by ectoderm. It is, therefore, an ectodermal evagination known as Rathke's pouch. This extends upward to meet a downgrowth from the diencephalon. In the 3rd month of intrauterine life, the connection of Rathke's pouch with the buccal cavity begins to disappear and is finally completely severed by the developing sphenoidal bone. Its epithelial lining becomes squamous. Finally it grows into the neighborhood of the stalk of the hypophysis and partially surrounds it. It is in this region that remnants persist as nests of squamous epithelium from which the cysts undoubtedly arise.

Erdheim[2] has shown that squamous epithelial cell masses are present in the hypophysis of 80% of adults, particularly in the prolongation which extends parallel to the infundibulum almost to the chiasm. This, of course, represents the site in the embryo where the ectodermal hypophysial duct inserts into the anterior lobe of the hypophysis. These squamous islets are remnants of the duct which usually disappears during embryogenesis. That tumors may arise from these "embryonal rests" was first suggested by Mott[3] and established conclusively by Erdheim.

These cysts form the most common tumors derived from the hypophysial duct[4]. They may occur at any age but 90% develop before the twentieth year and about 50% before the fifteenth year.

DIAGNOSIS

The signs and symptoms vary with the pathologic anatomy produced by the growth. They may be classified as those due to (1) intracranial hypertension, (2) disturbance of pituitary function, and (3) compression of the neighboring nervous structures. It is also interesting to note that the complaints of the patients vary according to their ages[5].

Children complain of headache and vomiting. Troublesome polyuria and enuresis may be present. Disturbances of endocrine character are usually present. These may be of the Lorain or Froehlich type. Although precise visual fields are difficult to obtain from children, examination often reveals bilateral discs and bitemporal hemianopia.

Young adults complain of headaches or of failing vision. They are frequently concerned about disturbances in the sexual sphere. Failing libido, amenorrhea and obesity are prominent complaints. Bizarre alterations of the visual fields are common.

Older patients complain of headaches or of visual disturbances.

Frequently only signs of intracranial hypertension are present due to the development of hydrocephalus from closure of the foramina of Munro or the aqueduct of Sylvius.

The x-ray is an important diagnostic adjunct. About half of all hypophysial duct tumors produce a patchy or spotty shadow of calcification, usually above, but occasionally within the sella turcica. The shadow may be minute and so faint as to be scarcely visible, or it may be quite large and dense. In our material, although calcifications were present in the histologic sections, no trace of a shadow was demonstrable in the x-ray films.

Treatment. The difficulties and dangers attending any attempt at removal practically preclude radical intervention[5]. Recently, Carpenter, Chamberlain and Frazier[6] treated four patients by irradiation and aspiration. They were alive and well on an average of thirty and one-half months after

treatment was instituted. The important feature of this treatment is its freedom from risk.

U. S. Marine Hospital.

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ANNUAL MEETINGS

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Arizona State Medical Association

Phoenix, Arizona

April 13-14-15, 1939

●

New Mexico Medical Society

Gallup, New Mexico

May 11-12-13, 1939

Southwestern Medicine

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OUR CHAMPIONS

Up for action in the current legislature of the state of Texas was a bill calculated to partially limit some of the current illegal practices by certain cults now suckling at the bosom of the public. Not much is said in the bill about chiropractors or any other cult specifically. It is true that the proposed act will help some in cleaning up certain practices of the chiro-racketeers that always have been illegal in Texas.

Chiro-racketeers are notoriously welcome in the business offices of the newspapers, for they buy space in satisfactory quantities wherein they may flaunt their dubious wares before the eyes of a not too critical section of the general pubic.

The El Paso HERALD POST has this to say:

"The physicians of Texas, who yell so long and loud against Government regulation, are sponsoring a bill in the Texas Legislature which will be the strictest sort of Government regulation of the healing art. But the Texas bill cuts down the competition to physicians. That's the difference.

It would run the chiropractors out of Texas, and why they should be chased out is hard to see. A lot of people prefer chiropractors, and while we would not be caught sick in a chiropractor's office, we think any American who wants to should have that privilege.

As The Dallas News says:

'There is a great deal of intolerance in the medical profession, often of course, justly applied. But the history of medicine is so replete with record of hostility to new thought that in time became dogma as to suggest that the doctors are certainly not always right. Medicine must admit in all candor that its progress has been made over the dogged resistance of its own disbelief.'

This Medical Practice Act is one with the barbers price-fixing bill and the 'fair trade' act. It is legislation for the benefit of the few."

Isn't it a breathless sight to behold the sweaty alacrity with which the minions of the daily press leap forth from their ink-stained caves and gird their loins to do battle for the "Dear Peepul's" rights now and then, especially when there is danger of slowing the beat of the bell on the cash drawer in the newspaper advertising department?

Adding the smelliness of some of the advertising now carried in the daily press to some of the belaboring Our Champions have taken lately leads to the inescapable conclusion that the once heroic loin cloth is rapidly dwindling in the eye of the public to just a tattered G-string.

It is no more the right of the less discriminating section of the public to have their necks rubbed by a chiro for their syphilis than it is for them to walk around spreading diphtheria and typhoid just as innocently. In both circumstances the sick one is a menace to society for the time being, and the police power of the state can and should be called into action to protect the general public, no matter whether the individual wills it or not. The law of quarantine and public welfare in general is a prerogative of the state, not the individual. That physicians have supported the strengthening of this power is all to their credit.

PHYSICIAN'S KNAVES?

Some time ago SOUTHWESTERN MEDICINE had something to say regarding the implications of the indictment of the American Medical Association[1]. Keyed closely to that statement is a recent opinion[2] by Dr. Henry Luce, president of the Michigan State Medical Society addressing a special session of his House of Delegates:

"I, for one, would like to have the American people know that I personally as a physician feel that I have been indicted by the United States Government; that the impugned reflection on the integrity of the American Medical Association is considered by me as a reflection upon myself. I believe that the rest of you feel much the same.

I should like to have every citizen of the United States know that his family physician has been indicted. Can you make that mother whose child's life has been saved think that her doctor is a knave? Can the millions of people that twenty-five years ago would have died of typhoid, diphtheria, diabetes, cholera infantum and other diseases, who walk the streets today and enjoy life's bounty, be made to say that American medicine deserves indictment? The blind have been made to see, the lame to walk, and the ill restored to health under our American system that never has defaulted an obligation nor proved unfaithful to trust."

1. S. W. Med., 22:368; Sept., 1938.
2. J. M. S. M. S., 38:151; Feb., 1939.

ARIZONA ANNUAL SESSION

Elsewhere in this issue there may be found the final program and announcements of the annual session of the Arizona State Medical Association, scheduled to open in Phoenix, April 13. The meeting ends April 15.

The following guest speakers are to appear:

Drs. Webb Weeks, New York City (Ophthalmologist); Lewis Morrison, San Francisco (Otolaryngologist); Alton Ochsner, New Orleans (Surgeon); John C. Jones, Los Angeles (Diseases of the Chest); Norman Miller, Ann Arbor (Gynecology and Obstetrics); Frederick Kellogg, Long Beach, Calif. (Internist); E. H. Cary Dallas, Texas, former President American Medical Association (Public Meeting and House of Delegates).

In addition, 9 Arizona authors will present papers.

The entire program is exceptionally well balanced, in that representatives of varied specialties will teach during the session, and suitable provision for discussions on medical economics are added.

The calibre of this meeting is such that it merits its support and attendance from not only Arizona members, but also from the medical men of New Mexico and El Paso. As usual, the Arizona physicians offer to all who may attend as their guests a sure-enough welcome.

Any one who has ever attended a session of the Arizona State Medical Association can testify that he was highly repaid for his attendance. Eminent teachers, adequate entertainment, the fellowship of good friends—these things should be of appeal to the physician needing a few days of rest from his winter's labors. On to Phoenix!

THE HOPE OF CHEMOTHERAPY

The discovery of sulfanilamide and its subsequent world-wide adoption as a potent addition to the armamentarium of the physician has given fresh impetus to research in the chemical laboratories. For long it has been predicted that startling discoveries in therapeutics would flow from the work of the chemist.

Chemistry has contributed mightily to the diseased and injured of this earth since the days of Paul Ehrlich, founder of modern chemotherapy. Sometimes these contributions have simply been stumbled upon during the course of unrelated experimentation. At other times they have stemmed from the parent discovery, at the cost of long, purposeful research.

Much more chance was involved in the final adaptation of sulfanilamide to clinical uses. Now that the drug is in almost universal use appertaining to both geographical distribution and widespread application in the vast field of diseases, it is not remarkable that chemists are diligently at work on compounds and derivatives of this substance. The hope is that other, more valuable siblings and kin-folk may be brought to scrutiny, now that the parent is well known.

Some interesting derivatives under investigation at present are: (1) sulfapyridine expected to prove valuable in the treatment of pneumonia; (2) sodium-sulfanilyl-sulfanilate, proving useful in certain virus diseases of ferrets and rabbits, possibly related to the viruses harmful to man; (3) 2-5 bis sulfanilamidobenzene sulfonic acid, which seems to confer some immunity against human influenza virus.

Dare physicians in the clinical fields hope that our brothers in the laboratories will soon give to us suitable chemical agents to use in our often discouraging battles with the common cold, poliomyelitis, rabies, tuberculosis, encephalitis, brucellosis, tularemia? A world confident in the capabilities of unhampered scientific research awaits the answer.

PROBLEM OF BURNS

Severely burned patients often show alarming reactions, such as high fever, marked asthenia and a great degree of toxicity. Death is the outcome of many cases, despite all therapeutic measures in use today. Reasons for death subsequent to severe burns are not yet well established, although several principal theories are recognized. Damage to internal organs such as pancreas or liver, increased viscosity of the blood (hyper-concentration) and the production of toxins at the site of the burn giving rise to a generalized intoxication, are some of the possibilities to be considered when attempts are made to assign an exact etiology to fatal outcome in cases of severe burns.

Cohn[1] states: "There are very few surgical conditions which we approach today in which the mortality is so high or where we are confronted with so many problems which are not clear. There is neither a unanimity of opinion as to the etiology of the cause of death, the early and late manifestations of serious burns and, if one is to judge by the lack of uniformity of management, there is anything but a definite routine for the management of these cases."

It is apparent that, despite the centuries-old effort to understand and treat burns in a logical manner, there are still too many unanswered questions, too much poorly-directed thought on the subject. Cohn[2] suggests that reports on cases of burns from various institutions be made rather uniform, so that comparable information may be exchanged among medical centers. Some such a plan would seem to be necessary if certain of the perplexing aspects of severe burns are ever to be intelligently cleared up.

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1. Cohn, I.: Burns, an Unsolved Problem. New Orleans M. and S. Jo., 91:465, March, 1939.
2. Ibid.

Special Section

Arizona State Medical Association

J. D. HAMER, M. D.
Associate Editor

REVISION OF CONSTITUTION

Concurred in by House of Delegates 1938, with final action or adoption, 1939.

ARTICLE I—*Name of the Association*

The name of this organization is the ARIZONA STATE MEDICAL ASSOCIATION.

ARTICLE II—*Purposes of the Association*

The purposes of this Association are to bring into one compact organization the entire medical profession of the State of Arizona and to unite with similar societies of other states to form the American Medical Association; to promote the science and art of medicine; to elevate the standard of medical education; and to promote public health.

ARTICLE III—*Composition*

This Association shall consist of active, associate, and affiliate members, who conform with the provisions of such membership as hereinafter provided in the By-Laws.

ARTICLE IV—*Component Societies and Councilor Districts*

Section 1. The membership of this Association shall be organized into county or district medical societies. The functions of each such society and its relation to the Association shall be defined in a charter issued to it by the Association. Every charter so issued may be subject to amendment and to revocation by the Association in such manner as may be prescribed in the By-Laws of the Association.

Section 2. A component county society is an aggregation of members of this Association living in one county, or an amalgamation of two or more counties .

Section 3. A component district society is an aggregation of members of this Association living in such districts as to make the organization of individual county societies inadvisable, or an amalgamation of two or more county societies.

Section 4. The Council, with the approval of the House of Delegates, shall designate the number of councilors and shall arrange the component societies into councilor districts.

ARTICLE V—*House of Delegates*

Section 1. The House of Delegates shall be the governing body of the Association invested with the right to vote.

Section 2 Composition of the House of Delegates. The House of Delegates shall consist of:

(a) Delegates elected by the component county societies;

(b) The Officers; the Councilors.

ARTICLE VI—*The Council*

Section 1. The Council shall be the Board of Trustees of this Association, and shall be the Finance Committee of the House of Delegates. It shall consist of the Councilors, the President, the President-elect, the Vice-President, the Speaker of the House of Delegates, the Chairman of Medical Defense, the Secretary, the Treasurer, and the Delegate to the American Medical Association. A majority of the Council shall constitute a quorum.

Section 2. The Council shall have full power and authority of the House of Delegates between Annual Sessions, unless the House of Delegates shall be called into special session as provided in this Constitution.

Section 3. The retiring president shall, each year, automatically become a member of the Council for a period of three years. He shall be designated as a Councilor-at-Large.

ARTICLE VII—*Annual Sessions and Meetings*

Section 1. This Association shall hold an Annual Session during which there shall be held General Meetings, which shall be open to all registerad members and guests.

Section 2. The general time and place for holding each Annual Session shall be fixed by the House of Delegates, or such authority may be delegated to the Council.

Section 3. Special meetings of either the Association or the House of Delegates may be called by the President on a two-thirds vote of the Council or upon petition of twenty delegates representing at least eight component societies.

Section 4. All meetings of the Council shall be called by the Chairman of the Council or upon petition by three Councilors.

ARTICLE VIII—*Officers*

Section 1. The officers of this Association shall be a President, a President-elect, one Vice-president, a Secretary, a Treasurer, a Speaker of the House, and three Councilors.

Section 2. The officers, with the exception of the Councilors, shall be elected annually. The terms of the Councilors shall be for three years; at least one member o fthe Council to be elected each year. All these officers shall serve until their successors are elected and installed.

Section 3. All officers shall assume office immediately following the session at which they were elected. The President-elect shall assume the office of President at the first meeting of the Annual Session following his election.

Section 4. In case of vacancy in office, unless otherwise provided for in this Constitution and By-Laws, the Council shall have power to appoint temporarily a successor, until the House of Delegates shall meet and re-elect one, or until the next Annual Session .

ARTICLE IX—*Funds and Expenses*

Funds shall be raised by an equal per capita assessment on each component society. The amount of the assessment shall be fixed by the House of Delegates but shall not be less than $12.50 per capita per annum, which amount shall include the annual subscription to the official Journal. Funds may also be raised from the Association's publications, by voluntary subscriptions, and in other manner approved by the House of Delegates. The Council shall submit an annual budget to the House of Delegates. Funds may be appropriated to defray the expenses of the Association, for scientific and educational publications, and for such other purposes as will promote the advancement of medicine. All resolutions appropriating funds must first be approved by the Council before action is taken thereon.

ARTICLE X—*The Seal*

The Association shall have a common seal, and

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PATHOLOGICAL LABORATORY

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Phoenix, Arizona

W. Warner Watkins, M. D.
C. N. Boynton, M A.

Harlan P. Mills, M. D.
W. J. Horspool, Bus. Mgr.

the House of Delegates shall have power to break, change or renew the same.

ARTICLE XI—*Amendments*

Section 1. The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Deelgates present at any Annual Session, provided that such amendment shall have been submitted in writing to the membership, or printed in the official publication of the Association, not less than one month before the meeting at which final action is to be taken.

Section 2. Upon adoption of this Constitution all previous Constitutions are thereby repealed.

ARTICLE XII—*By-Laws*

The authority for passing By-Laws to the Constitution of the Association shall be vested in the House of Delegates.

Revision Committee:
Dr. C. R. Swackhamer, Superior.
Dr. Hal W. Rice, Bisbee.
Dr. J. D. Hamer, Phoenix.

CASE NOTES

ATHETOSIS DUE TO SENSITIZATIONS—PARTLY POLLEN

ORVILLE HARRY BROWN, *M. D.*
Phoenix, Arizona

A young woman school teacher was seen first on March 12, 1938. About November of 1937 she began to have "jerking" of the left side of her neck, mostly when tired, which gradually spread to the left arm, hand and leg. She also developed an apparent thickness of her tongue—enough at times to interfere seriously with her speech; she also had pains in her elbow, wrist and fingers. The fingers even seemed slightly swollen at times. She complained of extreme leg-aches, toward the end of the day when fatigued. She has suffered greatly from recurring colds and had a window in the right antrum. She had much eye-strain and had had her eyes examined for glasses but could see better without them than with them, even though repeated attempts had been made to fit her. She was afflicted with mild constipation and had probably a mild hypo-ovarianism. At the time of her consulting me there was a mental factor; she was avoiding friends and tended to be a recluse. She felt that she was "queer"; at times her mental capacity was definitely affected so that she could not think "straight."

Her nose had pus in it, and although the sinuses did not transilluminate as clearly as would be expected for a normal nose, surgical work did not seem indicated; her tonsils were small and scarred; throat was red; there was a slight vaginal discharge. Her metabolism test was 13 minus. The blood calcium was 8.7 mg. per cent—the lowest of several tests. This soon returned to normal after a few intravenous injections of calcium but without noticeable improvement of the athetosis and other symptoms.

Thyroid extract was given; the nose and throat were treated from the start, without noticeable affect upon the symptoms except those local from the nose and throat. The hemoglobin was 95%; the coagulation time was two to three minutes and the sedimentation rate was 4 mm. in one hour; the Kahn and Kolmer tests were negative.

She reacted to a large number of foods which were eliminated from her diet and mostly on subsequent trials these were proven to have harmful affects upon her She was definitely better after the foods suspected of being harmful were eliminated.

She also reacted to feathers, orris root, house-dust, rayon and silk and to a considerable number of bacterial (stock) vaccines; all of these were put into a saline solution, highly diluted, and administered according to the reaction from a spot where a small portion of the combined vaccine was given intracutaneously each time. An over-dose of vaccine would aggravate her general symptoms, hence we believed we were helping her by continuing its administration.

Her improvement was really marked under this regime but it seemed that she had exacerbations which were unexplained on the findings and that the exacerbations of her jerking spells and dimmed mentality came especially on windy days. She was then tested for pollens (1/5000) intracutaneously, and she gave 24-hour reactions of redness varying from 15 to 40 millimeters in diameter. Each pollen of this section to which she reacted was given her in small doses, and her improvement from then on was more marked than it had been at any time since starting treatment.

I presume her colds were a partial evidence at least of her sensitivity to pollens; and certainly the pollens had a definite part in producing her athetosis and mental symptoms.

This young woman is now well of the athetosis and has been for six to seven months. She still has slight mild annoyances from her foods occasionally though she has been on a general diet for several months. She is still subject to colds and is under treatment on this account.

Summary: This case had a marked athetosis on left side with diminished mental capabilities to sensitications to foods, bacteria, and inhalants including pollens; pollen inoculations were started after all other treatment was well underway and seemed to be striking in their beneficial effects.

EFFECT OF UNNEUTRALIZED ARSPHENAMIN

ORVILLE HARRY BROWN, *M. D.*
Phoenix, Arizona

I am prompted to report this incident, though occurring years ago, because of a death which I recently read of (reference lost) from administration to a patient of an unneutralized solution of arsphenamin.

My patient was sitting at a table on which his arm was resting. Neoarsphenamin was being given him. Shortly after the start of the injection he collapsed and became unconscious. I withdrew the needle from the vein, laid the syringe aside and stretched the patient out on the floor. The re-

mainder of the arsphenamin was quickly neutralized with a trifle more alkali than usually used and, introduced into his blood stream. Almost as quickly as he "passed out" he "came back" and seemed to be none the worse for the experience.

This is only one observation; it may, however, help others who may have a similar break in technique.

COMMUNICATIONS

Sir:

I am enclosing a list of our guest speakers and the titles of their subjects for the coming New Mexico State Medical Convention.

Will you kindly publish this in SOUTHWESTERN MEDICINE so as to give the readers an idea of the fine program we are endeavoring to put forth. At a later date I shall send you a complete program.

Yours truly,

D. F. MONACO, M. D.,
Chairman of Program Committee.

(Ed.) Speakers listed to date:

1. CHARLES H. ARNOLD, Lincoln, Neb.
   Secretary of the International College of Surgeons.
   Subject: Splanchnic and Brachial Block Anesthesia.
2. BENJAMIN H. ORNDOFF, Chicago, Ill.
   Fellow of the American College of Surgeons.
   Professor of Roentgenology, Loyola University.
   Professor of Radiology, Loyola University.
   Surgeon, Division of Electrosurgery, Grant Hospital.
   Consulting Radiologist, North Chicago and American Hospitals.
   Subjects: 1. Early Changes in the Endometrium, Diagnosis and Management. 2. Electrosurgery and Radiotherapy for Breast Malignancy.
3. E. PAYNE PALMER, Phoenix, Ariz.
   Fellow of the American College of Surgeons.
   President of Staff, St. Joseph's Hospital.
   Attending Surgeon, Good Samaritan Hospital.
   Consulting Surgeon, St. Luke's Hospital.
   Subject: Suspicious Cancer Symptoms.
4. JACK G. HUTTON, Denver, Colo.
   Instructor in Dermatology and Syphilology, University of Colorado.
   Syphilologist, City Veneral Clinic, Denver, Colo.
   Diplomate of National Board of Dermatology and Syphilology.
   Subject: The Diagnosis of Syphilis.
5. PAUL J. CONNOR, Denver, Colo.
   Endocrinologist.
   Subject: The Objective Signs in the Diagnosis of Endocrinopathies.
6. WILLIAM H. DANIEL, Los Angeles, Calif.
   Fellow of the American College of Surgeons.
   Associate Professor of Surgery, University of Southern California.
   Attending Proctologist, Los Angeles County, Hollywood, Cedars of Lebanon, Queen of Angels and California Hospitals, Olive View Sanitarium and Orthopedic Hospital School.
   Member of Staff, Hospital of the Good Samaritan.
   Subject: Proctology for the General Practitioner.
7. NELSON PAUL ANDERSON, Los Angeles, Calif.
   Dermatologist.
   Subject: The More Common Skin Diseases.
8. GEORGE KENT, Denver, Colo.
   Fellow of the American College of Surgeons.
   Member of Staff, Mercy, St. Luke's, Presbyterian and Children's Hospitals.
   Subject: Unannounced.
9. HAROLD LINCOLN THOMPSON, Los Angeles, Calif.
   Fellow of the American College of Surgeons.
   Assistant Professor of Surgery, Medical Evangelists.
   Attending Surgeon, Hospital of the Good Samaritan, St. Vincent's and Los Angeles County Hospitals.
   Subject: Surgical Treatment of Peptic Ulcer.
10. PHILIP CORR, Riverside, Calif.
    Fellow of the American College of Physicians.
    Assistant Professor, College of Medical Evangelists.
    Subject: 1. Management of Diabetes. 2. Paper on the Anemias.
11. H. J. GOUBEAUD, Brooklyn, N. Y.
    Fellow of the American College of Surgeons.
    Attending Obstetrics and Gynecology, Kings County, St. Mary's and Holy Family Hospitals.
    Instructor in Obstetrics and Gynecology, Long Island College of Medicine.
    Lecturer in Obstetrics in training schools at Kings County and St. Mary's Hospitals.
    Subjects: 1. Ruptured Uterus. 2. Ruptured Ectopic Pregnancy.
12. OSCAR B. NUGENT, Chicago, Ill.
    Treasurer of the American Chapter of the International College of Surgeons and Member of the Executive Council.
    Chief of Staff, Chicago Eye, Ear, Nose and Throat Hospital.
    Director and Dean of the Chicago Eye, Ear, Nose and Throat College.
    Professor of Ocular Surgery, Chicago Eye, Ear, Nose and Throat College.
    Fellow of the American College of Surgeons.
    Consultant in Opthalmology, Jane Smith and Washington Old People's Home, Chicago; Godair and King Bruart Homes, Hinsdale.
    Subject: Eye Conditions of Interest to the General Physician.
13. R. RUSSELL BEST, Omaha, Neb.
    Fellow of the American College of Surgeons.
    Fellow of the International College of Surgeons.
    Assistant Professor of Surgery and Anatomy, University of Nebraska.
    Member of Staff, Bishop Clarkson Memorial, Douglas County, University of Nebraska and Nebraska Methodist Episcopal Hospitals.
    Subject: The Physiological Biliary Flush as an Aid in the Management of Biliary Tract Disease.
14. R. W. LAMSON, Los Angeles, Calif.
    Professor of Preventative Medicine and Hygiene, University of Southern California.
    Subject: Allergy and Pseudo-allergy in General Practice.
15. HOWARD WEST, Los Angeles, Calif.
    Clinical Professor of Medicine, University of Southern California.
    Subject: Symptomatology and Etiology of Spontaneous Hypoglycemia.

Sir:

We would appreciate it if you would announce the time and place of the next annual meeting of the American Association for the Study of Goiter. This meeting will be held in Cincinnati, Ohio, May 22nd, 23rd and 24th. The program for this three day meeting will consist of scientific papers dealing with goiter and other diseases of the thyroid gland, dry clinics conducted by guests of the Association and operative clinics in the various hospitals in Cincinnati.

The Association is offering the Van Meter Prize Award for the best essay presented in competition in accordance with the enclosed announcement. We would, of course, appreciate any publicity that you may feel disposed to grant us in your Journal concerning this Award.

Very truly yours,

W. BLAIR MOSSER, M. D.,
Corresponding Secretary.

INJECTION RELIEVES PAINFUL HEELS

Thirty-one of thirty-three persons were relieved of painful heels (calcaneal spurs) by a simple injection method which James R. Regan, M. D., Milwaukee, reports in *The Journal of the American Medical Association.*

For the last five years Dr. Regan has injected one-half cubic centimeter of sodium morrhuate in a 5 per cent solution of benzyl alcorol in those individuals with painful heels who did not respond to the use of well-fitting supports, felt pads, shoe correction, etc.

The relief obtained usually lasts for between two and three years, after which another injection may be given.

NEWS

General

The American Association for the Study of Goiter offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Cincinnati. Ohio, on May 22nd, 23rd and 24th, 1939, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten, double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than April 15th, 1939. The Committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

The Philadelphia Academy of Surgery announces the Samuel D. Gross Prize of Fifteen Hundred Dollars.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

Is it expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samual D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1940.

Each essay must be typeyritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

The Medical Corps of the United States Navy offers a number of internships and commissions to graduates of Class "A" medical schools who have completed or are about to complete an internship in a civilian hospital. Examinations will begin on May 8, 1939, and applications should be on file at least one month prior to that date. Detailed information may be secured by writing the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

The Faculty of the Harvard School of Public Health offers a short course of lectures, clinics, and demonstrations on the virus and rickettsial diseases, with special emphasis on their public health significance, to be held at the School during the week of June 12-17 1939. Lectures on the etiology, epidemiology, and methods of control of these diseases, given by members of the Faculties and by former students of the Harvard School of Public Health and of the Harvard Medical School, will occupy five mornings. Special clinics and demonstrations will be given each afternoon. In some instances these demonstrations will be continued through the week, so that all the members of the symposium can attend. On the last morning, a panel discussion will be held on the three main topics presented in the symposium.

The fee for the course will be $25.00, payable at any time up to June 12. Enrollment, however, should be arranged before June 1, as facilities for many of the clinics and demonstrations are limited. The lectures will be published later in a single volume, which will be sent to each person who has registered for the course.

Further information may be had by writing to the Secretary of the School of Public Health, 55 Shattuck Street, Boston, Massachusetts.

Monday, May 1, 1939 has been designated as Child Health Day by the Children's Bureau of the United State Department of Labor. Child Health Day activities are sponsored by the Children's Bureau at the request of the State and Provincial Health Authorities of North America, in accordance with the Congressional resolution of May 18, 1928, which authorized the President to proclaim May Day as Child Health Day. The slogan of the movement is "The health of the child is the power of the nation." The State May Day Committee, in conjunction with the State Department of Health usually directs the Child Health Day program that will best contribute towards strengthening the year-round Child-Health movement.

The Third International Cancer Congress will be held under the auspices of the International Union

Against Cancer, in Hadden Hall Hotel, Atlantic City, New Jersey, on September 11 to 16, 1939.

Membership in the Congress is secured by application to the secretary-treasurer, with remittance of $15. Make checks payable to the Third International Cancer Congress and mail to Dr. Donald S. Childs, 713 East Genesee Street, Syracuse, New York.

Membership in the Congress does not include the right to present a paper unless the paper or an abstract has been submitted to and been approved by the Program Committee. All papers must be accepted without an abstract. The Program Commitee reserves the right to reject any paper without recourse. All papers and abstracts, as well as any questions pertaining to them, should be addressed to Professor Francis Carter Wood, President, Third International Cancer Congress, 630 West 168th Street, New York, N. Y.

The proposed sections are as follows: General research; biophysics; genetics, general pathology of cancer; surgery; radiological diagnosis; radiotherapy; statistics; and education.

The California State Personnel Board requests applications for positions of senior and student intern. Certain professional qualifications are necessary in order to gain admission to the Board's eligibility list. Applicants must be citizens of the United States. Successful applicants may be appointed to positions in state institutions for the mentally diseased or deficient. Salary of senior interns is $50.00 a month plus maintenance for himself and family. $25.00 a month and maintenance is offered student interns. Complete details may be obtained from the State Personnel Board, 1025 P. Street, Sacramento, California.

For the fifth consecutive year, the psychiatric staff of the Menninger Clinic, Topeka, Kansas, will offer a week's postgraduate course in *Neuropsychiatry in General Practice*, April 17-22. This has been attended by physicians from nineteen states in the past four years. Enrollment is limited to thirty. Inquiries should be addressed to Dr. Robert P. Knight, Chairman.

El Paso

El Paso's infant mortality rate for 1938 was the second lowest in 18 years, the City-County Health Unit has reported.

Infant deaths in 1928 totaled 241 compared with 278 in 1937 and a five-year average of 272.

The infant death rate was 87 per 1000 live births compared with 106 in 1937 and a five-year average of 103. The lowest rate on record since the health department started keeping records in 1910 was 80 in 1936.

It was the third time in 18 years that the rate has been below 100. The third best record was 1932 when the rate was 93.

During 1937, there were 2752 births compared with 2620 in 1937 and a five-year average of 2639.

The highest infant death rate in the last 10 years was 134 in 1929.

The death rate in El Paso from all causes was the lowest since 1912. Deaths for the year totaled 1939 compared with 1501 in 1937.

The El Paso Mothers' Health Center, affiliated with the Birth Control Clinical Research Bureau of the New York City, reports for the period January 1, 1938 to January 1, 1939:

Total number of patients	1170
New patients	556
Old patients rechecked	614
New patients advised	514
New patients not advised an account of pregnancy or illness	42

Nationality		Religion	
American	150	Catholic	364
Mexican	378	Protestant	131
Negro	5	Hebrew	2
Syrian	4	Others	59
Chinese	2		
Others	17		

The regular meeting of the City-County Hospital Staff was held Wednesday, February 15, 1939, at 6:30 P. M., at City-County Hospital. The program was as follows:

"Traumatic Rupture of the Bladder"—Dr. Robert F. Thompson.

Discussion by Dr. Wickliffe Curtis. Discussion of fracture of pelvis in same case by Dr. Louis W. Breck.

The regular meeting of the El Paso County Medical Society was held February 13, 1939. Dinner was served. The scientific program, presented by the Interne Staff of the El Paso City-County Hospital, was as follows:

"Uterine Fibroids"—Dr. L. T. Hamilton.

"Amnesia"—Dr. Ira L. Howell.

The regular Staff Meeting of the Hotel Dieu Sisters' Hospital was held Wednesday, February 7, 1939, at 12:30 P. M. in the auditorium of the Nurses' Home. Luncheon was served. The program was as follows:

"Anuria Following Operation for Gangrenous Appendix"—Dr. C. E. Jumper.

Discussion by Dr. Paul Gallagher.

"Rheumatic Condition," "Broncho Pneumonia"—Dr. E. B. Rogers.

Discussion by Dr. F. P. Miller.

The regular Dinner and Staff Meeting of the Southwestern General Hospital was held Friday, February 24, 1939, at 6:30 P. M. in the Hospital Auditorium. The program was as follows:

"Case for Diagnosis"—Dr. A. P. Black.

Open Discussion.

"Adenocarcinoma of the Bladder"—Dr. A. W. Multhauf.

Discussion by Dr. H. E. Rogers.

The regular meeting of the El Paso County Medical Society was held February 27, 1939. Dinner was served at 7:00 P. M. The scientific program which followed at 8:00 P. M. was a discussion of fever therapy, as follows:

"Review of Literature"—Dr. E. A. Duncan.

"Discussion of Fever Induced by Typhoid Vaccine and Malaria"—Dr. L. M. Smith.

"Sydenhams Chorea Treated with Induced Fever"—Dr. A. P. Black.

"Treatment of Gonorrhea"—Dr. B. A. Wright, Kermit. Texas.

General Discussion opened by Dr. George Turner.

New Mexico

The opening of the Womack Clinic, 701-3 North Canal St., Carlsbad, New Mexico, has been announced by Dr. C. L. Womack of Carlsbad. Associated with Dr. Womack in the Clinic are Dr. Frank C. Bohannan, Dr. Clay Gwinn, and Dr. S. B. Bonney, dentist. A clinical laboratory will be operated in connection.

Dr. J. W. Myers has been appointed Superintendent of the New Mexico State Hospital at Las Vegas.

Dr. Troy C. Sexton, 65, one of the outstanding physicians of Las Cruces, died February 22, 1939 in the family home. He was a former mayor of Las Cruces, and was prominent in city and county affairs many years. Dr. Sexton came to Las Cruces from New Orleans 34 years ago. Survivors are the widow, Mrs. Lea B. Sexton, Las Cruces postmistress; a daughter, Mrs. Jack Skaggs, of Las Cruces, and a son, Robert Sexton, of Mitchel Field, N. Y.

AUXILIARY NEWS

Bernalillo County

(New Mexico)

The first meeting of the new year for the Bernalillo County Medical Auxiliary was held September 26th at the home of Mrs. J. W. Myers (in Albuquerque), at which time plans for the year's work were discussed. October 31, the meeting was held at the home of Mrs. H. L. Brehmer. November 28, the meeting was at the home of Mrs. L. F. Elliott, at which time all members sewed Christmas stockings which they later filled and donated to the Christena Kent Day Nursery.

On January 30th, the annual tea for all Bernalillo County doctors' wives was held at the home of the president, Mrs. J. W. Hannett. In the receiving line with Mrs. Hennett were all the officers for the year, including: Mrs. Leo Cohenour, vice-president; Mrs. Carl Mulky, secretary; Mrs. I. B. Ballenger, treasurer; Mrs. J. W. Myers, corresponding secretary, and Mrs. B. F. Roberts, publicity chairman. Approximately forty guests attended.

The February meeting, a jelly shower for St. Anthony's Orphanage was held the last Monday of the month, at the home of Mrs. Carl Mulky.

HELENE MYERS,
Corresponding Secretary.

El Paso County

Dr. George Turner spoke on "Socialized Medicine" at a meeting of the Woman's Auxiliary to the El Paso County Medical Association at 3:00 P. M., Monday, February 13, 1939, in the home of Dr. and Mrs. A. W. Multhauf, 935 Rim Road.

Paul Miller played flute solos, and Mrs. Frank Cameron played a piano solo.

Hostesses, in addition to Mrs. Multhauf, were: Mesdames T. C. Liddell, A. D. Long, K. D. Lynch, C. H. Mason, T. J. McCamant, Paul McChesney, Irving McNeil, Y. M. Milan, J. L. Murphy, S. H. Newman, P. R. Outlaw, James A. Pickett, and R. L. Ramey.

Maricopa County

(Arizona)

The Auxiliary to the Maricopa County Medical Society is making plans to entertain the wives of the doctors who attend the state convention at Phoenix in April. A committee on entertainment has been named as follows: Mrs. C. C. Craig, chairman; Mrs. Ralph Palmer, Mrs. Kent Thayer and Mrs. C. W. Sult.

At the December meeting a free-will silver offering was collected to pay for supplies of handcraft materials for the Crippled Children's Home.

A talk on re-dedication to the principles of the constitution was presented during the national re-dedication week by Dick Marsh.

Mrs. F. G. Holmes and Mrs. Ralph Palmer gave papers discussing the national viewpoint on socialized medicine at the January meeting.

MISCELLANY

PSYCHOLOGY OF THE AMERICAN LAXATIVE HABIT

The functions of nutrition and sexuality are closely interrelated. This goes back to the fact that the infant makes the output of his alimentary tract, as well as its intake, a means of pleasure. Jones (*Papers on Psycho-analysis*, Ch. XL, pp. 664-688) has elaborated this defecatory theme exhaustively. Normally, this means of pleasure is repressed early in life, but a strong ambition to achieve control of the sphincters is a basic trait. Then the feces are something that the infant *makes*, which gives this gift to the world value, and there is a pride in the achievement, for which his mother praises him—the first manifestation in man of self-expression, indeed, of the creative impulse. There is also an early aim to increase sphincteric control, which might at times, of course, take the form of expediting excretion. All this interest is infantile but it may revive in the adult, particularly when a veritable propaganda, having directly to do with defecation, is aimed at him by commercialists.

This analerotic character, so much emphasized by the Freudian school, and so often grossly apparent in the relatively infantile orders of mankind, gives us the prevailing cult of the privy and

the vast caproctic folklore so often disguised as humor. This preoccupaton with the water closet and keen interest in the events of the toilet found perfect expression a few years ago in the shape of Chic Sales choice book of fecal episodes in the life of Americans.

What wonder, then, that the laxative promoters find an audience perfectly conditioned for their suggestions and appeals. This propaganda fits in exactly with the national psyche in so far as it is infantile.

A very practical aspect of the question has to do with the incidence of appendicitis, undoubtedly a related consequence, many times, of dosage with laxatives and cathartics. So, too, do colonic ailments figure in the vicious set-up, constituting a physiological exploitation of the "feces market."

There is singular truth in the figure of speech about "smelling to heaven" when used in reference to the commercialization of laxatives in America. —*Medical Times.*

LOOPHOLE

By a strange anomaly, a layman cannot prescribe for one patient, but he can prescribe for a million. A leading New York City doctor held in his hand the other day the circular of a medical preparation put out by a manufacturer who made no claim to be a physician.. The preparation had in it liver extract, ascorbic acid, vitamin B, copper citrate, oil of peppermint, ferrous sulfate, and cottonseed oil. "No chemist would fill that prescription if it were written by a layman," said the doctor, "but a layman can put it up and prescribe it for thousands and millions of people he never saw!" There is a legal loophole badly in need of a stopper.—*N. Y. St. J. Med.*

ANALYSIS OF THREE KICKERS

"I cannot understand why so few men attend their county and state medical society meetings. It is not because they are so busy, as the busiest physicians are always found where there is a chance to learn. After years of observation I have reached the conclusion that there are three kinds of physicians who don't attend meetings—(1) the person who has not the ability to plan his work so that he can have an evening for recreation at the meeting; (2) the man who thinks he knows it all, has not read a new book since leaving school, and has no time for reading the JOURNAL or other publications; and (3) the man who is afraid he might lose a patient should he leave his office. These three types form the fault-findng group; they complain, but will not come to the meetings and put their shoulders to the wheel, clarify their visions, help remove the faults they see, and become what is most needed by the society and always welcomed by its officers—workers instead of drones or complainers.

"Yes, the opportunity for the present-day physician to be an up-to-date physician is right at his door, and I am not only sorry for those who are missing these opportunities, but for their patients." —*Pittsburgh Medical Bulletin.*

HOSPITALS FOR NARCOTIC ADDICTS

A narcotic addict desirous of entering the U. S. Public Health Service Hospital at Lexington, Ky., or Fort Worth, Tex., for treatment as a voluntary patient will, upon application to the Surgeon General of the U. S. Public Health Service, Washington, be furnished the necessary blanks and instructions. A charge of $1 per day is made; but if an applicant is impecunious, this charge will be waived upon presentation of certain proof. In order to be eligible for treatment, a person must be a citizen of the U. S. and be a habitual user of opium or coca leaves or their derivatives, or of Indian hemp or peyote. A medical examination by a physician designated by the applicant, or by a U. S. Public Health Service medical officer, is required. Should the report of this medical examination indicate the applicant is an addict, the Surgeon General addresses a letter to him authorizing his admission any time within 4 weeks of the date of the letter. He cannot be confined without his consent. At the present time there are no accommodations for women patients, but it is anticipated that such accommodaions will be available early in 1940.—*Pub. H. Reports.*

LIMITATIONS OF SPECTACLES

Current fallacious opinions of laymen are: (1) That. regardless of age, eyes vary in refraction from year to year and should, therefore, be examined periodically; (2) that nearsighted persons must wear their glasses constantly to keep from becoming more myopic; (3) that the principal cause of myopia is continued close work or reading.

Symptoms recur in hyperopia, not because of a change in the refractive error, but because, after a time, the eyes require a lens more closely approximating full correction.

The patient should be told that he, himself, is the best judge of the length of time his glasses are useful. A student, who reads daily for long periods and must have efficient eyes, may require a second examination at the end of two years; whereas a housewife, who greatly dislikes glasses and is indifferent to an occasional headache, may delay returning for re-examination as long as 10 years.

Hyperopia increases and myopia decreases each year from birth until the end of the seventh year; after the eighth year hyperopia decreases toward emmetropia. At about the 20th year, both myopia and hyperopia tend to become stationary.

There is no evidence that the course of progressive myopia with retinal atrophy, myopic conus, or halo, or even the course of simple myopia, is over checked or altered by glasses. Most myopic patients can be assured of useful vision all their lives. In the majority of cases of myopia glasses not be worn if clear distant vision is not essential.

Glasses are to be regarded as aids to increase vision, as in myopia, or to relieve ciliary fatigue. They are not curative.—*Clin. Med. and Surg.*

MEDICINE AND THE LAW

Prejudice has arisen against the testimony of the physician, when he appears as an expert I think this may be traced to the great divergence between the opinions of experts in mental diseases. When the physician and the lawyer speak of insanity they do not speak of the same thing. With the physician and psychologist, mental derangement may be entirely unconnected with any doctrine of responsibility. The psychopathic personality, which expresses itself in criminality, is the very embodiment of irresponsibility to the physician. And yet, in law, we hold him responsible.

I believe that in a great majority of cases difference of opinion between medical men arise from the same reason that differences arise between other experts. *Lawyers are proverbially in disagreement,* not only as to the meaning of decisions and such differences are easily explainable when we consider how laws are enacted, enforced and interpreted.—*Minn. Med.*

COLD REMEDIES

In the files of the State Department of Health were found listed 235 proprietary preparations which, on their labels, claimed to be effective treatments for colds. As in the case of headache remedies, the drug most frequently used in these cold remedies was acetanilid or one of its derivatives. Tabulating the analyses of the preparations labeled as treatments for colds into three ten-year periods, it was found that in the first decade, 1907-1917, 36% of the preparations contained this drug. In

the second decade, 1918-1927, inclusive, 24% of such preparations contained acetanilid. In the third decade, 1928-1938, the percentage of such remedies containing acetanilid had risen to 49.

The next most important ingredients found in the so-called cold cures were laxative drugs, such as aloes and other plant material having laxative effect. In the period 1907-1917, 22% of the remedies contained aloes. In the second decade, 1918-1927, inclusive 19% carried laxative ingredients. In the third decade 1928-1938, 50% were laxative in character.

Quinine and its salts appeared in quite a number of the cold remedies as an important ingredient. In the decade 1907-1917 14% of the cold remedies contained cinchona salts. In the period, 1918-1927, inclusive, only 2% contained quinine. In the decade 1928-1938, the percentage of such remedies containing quinine had risen to 35.

Morphine is found, to some extent, in the so-called cold cures, but its use is decreasing. It was found in 19% of cold remedies in the decade 1907-1917, while in the period 1917-1927, only 7% of the cold remedies contained this drug. In the decade 1928-1938, proprietary cold remedies containing morphine dropped to 2%.

Quite a number of the products offered as cold remedies are in the form of salves and ointments. These products were found to contain ammonia, menthol, thymol, turpentine, alcohol, oil of mustard, capsicum and eucalyptus.

Acetanilid depresses the heart and lessens the oxygen carrying power of the blood. Its indiscriminate use is dangerous. Laxatives, of course, have their uses, but are injurious to the health when taken to excess. Quinine is a protoplasm poison, affecting protozoa more than bacteria. It is somewhat irritating to the stomach and intestines and, when absorbed, may cause ringing in the ears. Moderate doses produce no marked effect, except in those allergic to that drug. Morphine is used chiefly as an analgesic in severe or acute pain, but even here its use should be very guarded, chiefly on account of the great danger of the formation of the morphine habit Habituation to morphine is easily established and most difficult to cure. As for the ointments and salves, they may all have certain value as counter irritants, but no one of them can, in any real sense, be characterized as a cure for a cold.

The whole truth of the matter is that medical science has so far been unable to find a specific cure for the common cold. While the cold is definitely recognized as a communicable disease and it is generally agreed that the cause is a germ, leading scientists are far from being a unit as to the kind of germ which is the causative agent. Numerous types of germs have been identified with colds, but so far the most careful and exhaustive microscopic studies have failed to find any particular germ common to all colds.—*Kentucky Bull. Dept. of Health.*

IMMUNIZATION PROCEDURES

1. THE COMMON COLD

A. *Test:* None. B. *Active Immunity:* No active immune principle of any proven value has been described. C. *Passive Immunity:* None.

II. DIPHTHERIA

A. *Test:* The Schick test: Inject intradermally 0.1 cc. of diphtheria toxin diluted in saline. Some manufacturers put the same test dose of toxin in 0.2 cc. of saline. The use of readily diluted toxin for the Schick test is fairly common and sufficiently accurate for general clinical use. Read the test in from 48 to 72 hours. An area of redness of .5 ch. in diameter or more denotes a positive test and susceptibility. Pseudo reactions should be noted. These are an indication of an acquired sensitivity to the proteins of the diphtheria bacilli and occur mostly among children who have been immunized.

B. *Active Immunity:* Three types of material are used for active immunization against diphtheria: (1) toxin antitoxin—for individuals over 10 years of age, injected subcutaneously in doses of 0.5 cc., 1 cc. at weekly intervals; (2) diphtheria toxoid or (3) alum precipitated toxoid for children under 10 years of age—each toxoid material to be injected in doses of 0.3 cc. 1 cc. and 1 cc. at *weekly* or *longer intervals.* Variations of these doses have been used if reactions follow the initial injection. All of these materials will immunize, although it may take as long as a year for a Schick test to become negative after the use of toxin antitoxin as compared to a month following injections of toxoid. One dose of alum precipitated toxoid does not immunize an individual as was originally thought.

Always do a Schick test within 6 months after immunization to determine whether immunity is present. Do not immunize before 9 months of age.

C. *Passive Immunity.*

1. *Treatment:* The bulk in which the dosage of diphtheria antitoxin is contained is now so small that it need not be considered. It is no longer necessary to remember the dosage by age, weight, etc. The important thing is to know how long the Patient has been ill and to appreciate the severity of the disease. If it is mild or moderatetly severe, from 20,000 units to 40,000 units of antitoxin are given intramuscularly. If the patient is seriously ill, from 40,000 units to 80,000 units of antitoxin may be given intravenously or intramuscularly. If the pulse pressure has fallen, the antitoxin should be given intravenously. If the case is one of diphtheria gravis, from 80,000 units to 200,000 units may be necessary. Some members of the Committee feel that there is no difference in the results obtained with the use of 40,000 units or 200,000 units of antitoxin. It should be stated, however, that in order to neutralize diphtheria gravis toxin a much greater number of antitoxin units is needed than is necessary to neutralize Parke #8 strain toxin from which our antitoxin is made. Watch for immediate accelerated and later serum reactions.

2. *Exposures* may be given from 1,000 units to 2,000 units of antitoxin intramuscularly. It is felt that exposures should not be given antitoxin except under exceptional circumstances or in country practice where the patient sometimes cannot be seen regularly.

III. EPIDEMIC ENCEPHALITIS

A. *Test:* None. B. *Active Immunity:* None. C. *Passive Immunity*—1. *Treatment:* From 50 cc. to 75 cc. of convalescent serum has been injected as a passive immune principle but there is no evidence that it is of any value. 2. *Exposures:* There is nothing of proven value.

IV. ERYSIPELAS

A. *Test:* None. B. *Active Immunity:* A vaccine has been recommended for those who repeatedly contract the disease. It is not practical and there is no evidence that it has any value.

C. *Passive Immunity*—1. *Treatment:* Erysipelas antitoxin has been used as a passive immune principle, but there is no conclusive evidence that it aborts, lessens the attacks or stops the spread of the disease. There is no evidence that convalescent serum will be of any value in this disease. Sulfanilamide has been recommended. The object here is to maintain a proper concentration of the drug in the blood stream—about 5-10 mgm. per cent. The dose for the first day is about 1 grain to the pound, half of which is given as soon as possible and the other half spaced over the next 24 hours. For the next 2 days the dose is one-half grain to the pound divided over 24 hours. Continue this sustaining dose if necessary. Watch for cyanosis, morbilliform eruptions, vomiting temperature rise, etc. After 300-400 grains have been given to extra cautious and watch carefully for symptoms. This drug

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should not be used in the cases where severe liver disease is present and with caution where severe kidney damage exists. 2. *Exposures:* There is no specific therapy.

V. EPIDEMIC MENINGITIS

A. *Test:* None. B. *Active Immunity:* None. C. *Passive Immunity—Treatment:* Specific antiserums, specific antitoxins and sulfanilamide have been recommended. (1) Where antiserums are used, it is often preferred to give the patient massive doses for two days and then gradually to discontinue therapy. One contagious disease hospital injects the patients intrathecally twice a day, giving from 10 cc. to 30 cc. of serum each time. The patient is also injected intravenously or intramuscularly three times a day and given from 30 cc. to 90 cc. of serum each time. Thus, 10 treatments will be given in 48 hours and the total number of treatments tapered off gradually,—omitting one intrathecal injection the third day, an intravenous or intramuscular treatment the fourth day, and so on. When intrathecal injections are made, the amount of serum introduced is always about 5 cc. less than that amount withdrawn by spinal tap *after the pressure has become normal.* Never exert pressure when injecting serum intrathecally. (2) Where antitoxin is used, one contagious disease hospital gives a continuous slow intravenous drip of from 100,000 units to 150,000 units of antitoxin in 1,000 cc. saline to which 1 cc. of 1:1,000 adrenalin has been added. The spinal fluid findings and the condition of the patient determine whether further therapy is indicated. (3) Sulfanilamide has been used as outlined under ERYSIPELAS. The drug has also been given intraspinally, although some members of the Committee feel that ingestion of the drug is sufficient. (4) The practice in most contagious disease hospitals is to combine either antitoxin or antiserum with sulfanilamide. *Note:* Watch for relapses. Do not treat serum sickness for a relapse. The treatment as outlined above may be varied to suit the circumstances.

(Continued in next issue)

BOOK NOTES

THE TRAFFIC IN HEALTH. By Charles Solomon, M. D., Assistant Clinical Professor of Medicine, Long Island College of Medicine. Pp. 393, including index and table of contents; cloth; New York; Navarre Publishing Co., Inc.

This book is a comprehensive volume which would serve well as reference and source material for anyone concerned with advising or writing on the patent medicine racket in America. Many of the facts contained in the work were obtained from the American Medical Association, and couched in such language that the whole thing reads like a fascinating novel. The author evidently did a lot of work in preparing this piece. It is unfortunate that this work will probably not attain very wide circulation. It isn't very fashionable to lay ghosts or stick pins in kiddies' balloons. And the author lays about him in rather lusty fashion with a great big old-fashioned hat pin. The reasonable man will find this work highly entertaining but he doesn't particularly need the knowledge contained therein. The fellow who does need the guidance of this author will doubtless never see the book. However, we hope that the publishers are not thereby discouraged.—*S.*

SURGICAL PATHOLOGY OF THE MOUTH AND JAWS. By Arthur E. Hertzler, M. D., Professor of Surgery, University of Kansas. Illustrations, 206; pp. 246, including index; cloth; Philadelphia; J. B. Lippincott.

This book ends Dr. Hertzler's ten volumes of surgical pathology. No attempt is made to outline treatment, and wisely so, because newer treatments are advanced from time to time out-dating a book very rapidly. With the excellent short descriptions and the unusually fine illustrations shown in this text it would seem that the book should be valuable as a reference work for many, many years with no danger of becoming obsolete. Various lesions of the mouth and jaws, both benign and mal-

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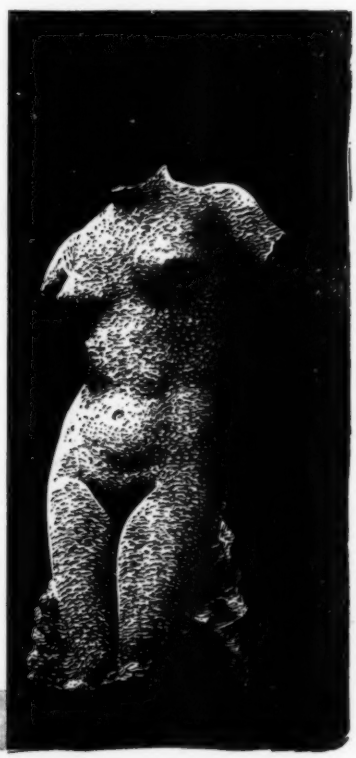

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ignant, are dealt with according to a very complete outline form. It is difficult to understand how a physician who must deal with the head and neck could afford to be without this book. The reviewer had occasion to consult it for help in diagnosing two tumors of the tongue on the very day of the book's arrival.—*S.*

TWENTY-SEVENTH REPORT OF THE HENRY PHIPPS INSTITUTE. For the study, treatment and prevention of tuberculosis. 1936-1937. University of Pennsylvania. Published by the Henry Phipps Institute, Philadelphia, Pa., 1937.

It is to be regretted that this volume cannot be released under a more appealing title for in truth, it represents the workings of a Tuberculosis Laboratory, wherein experiments in every phase of this disease are being conducted daily. As Dr. Esmond R. Long, Director of the Institute, so ably states in his foreword, it is an "inventory of accomplishment", in which the results of these experiments have been tabulated over a period of five years (1933-1937).

Amazing to the reader will be the vast amount of work carried on in the Institute, and the careful and complete methods utilized in attaining results. The purpose in founding the Henry Phipps Institute was to establish a place for research and to provide the means by which the work might be carried on, consequently the text of this report is to reveal what has actually been accomplished. The information and statistics contained in this book are not based on mere supposition, nor are they the expression of personal opinions; they are the results of actual demonstrations and represent weeks, months, and even years of intent work on the part of the Institute's medical staff, whose members are outstanding men in this particular field of medicine.

Although the large clinic of the Henry Phipps Institute is primarily obligated to the care of the tuberculous sick in the section of Philadelphia in which the Institute operates, in the course of routine practice the Clinic's staff has taken advantage of its unusual opportunity to advance knowledge as to the nature and spread of the disease. Because of the social make-up of that particular section of the city, the clinical staff is enabled to study at first hand the part played by racial, environmental, economic, and other factors in the severity of tuberculosis, and much of the research of the Institute is devoted to this field of inquiry. However, there is hardly any phase of the general problem of tuberculosis that is not being investigated by the Institute. Following is a brief outline of the research which has been conducted during the period of this report:

1. Racial Variations in Tuberculosis—with special emphasis on the comparative study of the incidence and types of tuberculosis in the White and Negro races.

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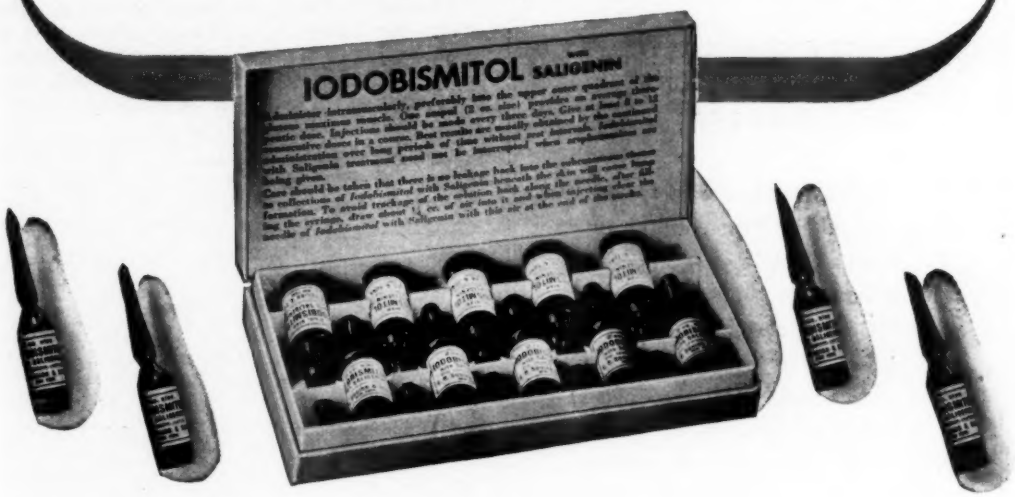

A RECENTLY PUBLISHED clinical study[1] of combination bismuth therapy includes the comment that: "One of the problems of bismuth therapy for syphilis is to achieve a rapid rise of the metal in the blood stream to a therapeutic level and to keep it there without too great hardship on the patient. . . . This we believe we have achieved by the combined use of iodobismitol or sobisminol and weekly injections of bismuth subsalicylate. . . . Such a form of bismuth therapy would be particularly useful in the acute stage of syphilis when the patient is sensitive to arsenic and it is necessary to rely on other antisyphilitic measures. Moreover, for the patient with early syphilis, who is just starting therapy, this schema might be employed in the first course of bismuth therapy when the clinician is desirous of dealing a heavy blow to the spirochetes from another angle than that of arsenic."

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[1] *Jl. A. M. A.* 111:2175 (Dec. 10), 1938.

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Whether his desire be casual perusal or intent study, the tuberculosis specialist cannot help but be interested in this book, for the information contained therein is scientifically correct and, therefore, of practical value.—*R. B. H. Sr.*

MARIHUANA, AMERICA'S NEW DRUG PROBLEM. By Robert R. Walton, Professor of Pharmacology, School of Medicine, University of Mississippi, with a foreword by E. M. K. Geiling, Professor of Pharmacology, University of Chicago, and a chapter by Frank R. Gomila, Commissioner of Public Safety, New Orleans, and M. C. Gomila Lambou, Assistant City Chemist, Philadelphia; J. B. Lippincott Company, 1938. Price $3.00.

Once a concern principally of the Southwest, marihuana has now become a problem concerning most of North America. At present much of that concern is expressed in the activities of law enforcement agencies. The parents and schools must acquaint themselves more fully with the insidious advance of marihuana into the lives of adolescents. That the menace is growing, there can be no doubt. That effective control can be brought about through the spread of knowledge regarding the problem is likewise true. The authors of this book have done a service in bringing into focus the latest knowledge concerning the drug, marihuana. The volume should be in the hands of all those concerned with study or suppression of the rotten traffic in this narcotic.—*S.*

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